R10-16-C-002

Tigard City Center Development Agency

The City of Tigard's Urban Renewal Agency

CCDA

December 16, 2015

Ms. Susan Morales
U.S. Environmental Protection Agency Region 10
1200 Sixth Avenue, Suite 900 (ECL-112)
Seattle, WA 98101-3140

RE: City Center Development Agency of the City of Tigard, Oregon – EPA Brownfields Cleanup Grant Proposal Main Street /Fanno Creek Property 1

Dear Ms. Morales:

The regeneration of the dilapidated Main Street /Fanno Creek properties has been a top priority for Tigard's urban renewal agency, the City Center Development Agency (CCDA) for many years. Its highly prominent location adjacent to Fanno Creek and its substantial Main Street frontage provide a key opportunity for the CCDA to revitalize Downtown Tigard into the interconnected green heart of the community.

The CCDA acquired the properties specifically to accelerate Downtown recovery. It is currently funding pre-development work and architectural site design in anticipation of cleaning up the site. The envisioned development centers on a new public space overlooking Fanno Creek, Tigard's most important natural resource. The viewing deck will feature interactive watershed education features, along with nature-inspired public art. The site's riparian areas will be restored, encouraging the resurgence of threatened wildlife, such as the Western Pond Turtle and the Red-legged Frog, and the return of historic cutthroat trout runs. The balance of the site will be a 4 or 5 story transit oriented mixed use development. One ground floor use under study is a food business incubator. Micro-restaurants and shared commercial kitchen will encourage innovation and job creation among local food entrepreneurs. The redevelopment of the Site will improve the physical, social, and economic health outcomes for the Tigard community.

These plans will remain only plans until the site is cleaned up and readied for development. Private developers and business owners are hesitant to undertake a project in an emerging district when dirty soil and groundwater are present. The CCDA's limited resources are unable to address this issue alone.

Over the past ten years, hundreds of Tigard stakeholders have provided input to plans for our Downtown Center and voters approved an urban renewal district to implement it. Visualize walking through downtown Tigard in 2035:

- The residents of new downtown affordable, workforce, and market rate housing units enjoy easy access to shopping and services and do not have to depend on a car for every trip.
- On the nearby Fanno Creek Trail, cyclists and walkers travel safely between homes, schools, libraries, medical offices, and jobs all over Tigard and connect to a regional trail system.

- New and expanded businesses have generated high-paying jobs with more opportunities for Tigard residents to work closer to where they live, with reduced commute times and greenhouse gas emissions.
- The Tigard Transit Center bustles with activity from new riders who live or work within convenient walking distance of bus and commuter rail service.
- Investments in downtown have blazed the way for Tigard to achieve our 30-year vision of becoming "the most walkable community in the Pacific Northwest where people of all ages and abilities enjoy healthy and interconnected lives."

Tigard stakeholders are eager to see this vision fulfilled. With limited resources, some progress has been made including two street improvements that have vastly improved the pedestrian environment and protect Fanno Creek using green street features. Some new apartment development is underway. However, much work remains.

Tigard has made progress on breaking down the barriers that brownfields create through the EPA Communitywide Brownfields Assessment Grant awarded in 2014. An EPA Cleanup Grant will provide a crucial boost to the city's redevelopment efforts and leverage significant amounts of public investments made on improving the downtown. Tigard is ready and willing to work with our community partners to clean up these contaminated properties, build community gathering spaces and create a more livable, walkable, climate smart, and economically resilient community in our downtown. It looks to create a "virtuous circle" where public projects and the redevelopment of contaminated property inspires and supports further development on Main Street. With your approval of the grant, we will be able to make palpable progress towards our vision of a healthy and interconnected Tigard.

Sincerely,

Marty Wine
Executive Director
City Center Development Agency

a.	**Applicant ID:**	City Center Development Agency of the City of Tigard 13125 SW Hall Blvd. Tigard, Oregon 97223
b.	**DUNS number**:	0801056460000
c.	**Funding:**	i) Grant type: Cleanup; ii) $200,000 (no cost-share waiver); iii) Hazardous Substances
d.	**Location:**	City of Tigard, Washington County, State of Oregon
e.	**Property Info:**	Main Street /Fanno Creek Property 1, 12535 SW Main Street, Tigard, Oregon 97223 (tax lot 2S102AB02000)
f.	**Contacts:**	Project Director: Sean Farrelly, Redevelopment Project Manager, 503-718-2420, sean@tigard-or.gov, CCDA, 13125 SW Hall Blvd. Tigard, Oregon 97223 Chief Executive: Marty Wine, Executive Director, 503-718-2486, marty@tigard-or.gov CCDA, 13125 SW Hall Blvd. Tigard, Oregon 97223
g.	**Date submitted:**	December 18, 2015
h.	**Project Period**:	September 2016 – September 2019
i.	**Tigard Population:**	49,633

Appendix 3
Cleanup Other Factors Checklist

Name of Applicant: City Center Development Agency of the City Of Tigard

Please identify (with an ***X***) which, if any of the below items apply to your community or your project as described in your proposal. To be considered for an Other Factor, you must include the page number where each applicable factor is discussed in your proposal. EPA will verify these disclosures prior to selection and may consider this information during the selection process. If this information is not clearly discussed in your narrative proposal or in any other attachments, it will not be considered during the selection process.

Other Factor	**Page #**
None of the Other Factors are applicable.	
Community population is 10,000 or less.	
Applicant is, or will assist, a federally recognized Indian tribe or United States territory.	
Targeted brownfield sites are impacted by mine-scarred land.	
Applicant demonstrates firm leveraging commitments for facilitating brownfield project completion by identifying amounts and contributors of funding in the proposal and have included documentation.	9
Recent (2008 or later) significant economic disruption has occurred within community, resulting in a significant percentage loss of community jobs and tax base.	
Applicant is one of the 24 recipients, or a core partner/implementation strategy party, of a "manufacturing community" designation provided by the Economic Development Administration (EDA) under the Investing in Manufacturing Communities Partnership (IMCP). To be considered, **applicants must clearly demonstrate in the proposal the nexus between their IMCP designation and the Brownfield activities. Additionally, applicants must attach documentation** which demonstrate either designation as one of the 24 recipients, or relevant pages from a recipient's IMCP proposal which lists/describes the core partners and implementation strategy parties.	
Applicant is a recipient or a core partner of HUD-DOT-EPA Partnership for Sustainable Communities (PSC) grant funding or technical assistance that is directly tied to the proposed Brownfields project, and can demonstrate that funding from a PSC grant/technical assistance has or will benefit the project area. Examples of PSC grant or technical assistance include a HUD Regional Planning or Challenge grant, DOT Transportation Investment Generating Economic Recovery (TIGER), or EPA Smart Growth Implementation or Building Blocks Assistance, etc. To be considered, **applicant must attach documentation.**	
Applicant is a recipient of an EPA Brownfields Area-Wide Planning grant.	

1. COMMUNITY NEED

a. Targeted Community and Brownfields

i. Targeted Community Description – The applicant, the City Center Development Agency (CCDA) is the urban renewal agency of the City of Tigard, Washington County, Oregon. Tigard, a first-tier suburb in the Portland metropolitan area, is a diverse community of 49,633. For much of its history, Tigard was primarily an agricultural area with supporting businesses and industrial uses adjacent to a railroad corridor. When it incorporated in 1961, its population was 1,084. Tigard saw rapid, largely uncoordinated growth with construction of freeways in the 1960s and 1970s, and is currently Oregon's 12th largest city. The City contains several major transportation corridors.

The Main Street/Fanno Creek Properties sit in the heart of Tigard's Downtown. For several years, the CCDA and community members have envisioned a more vibrant, walkable, and economically healthy Downtown Center served by transit, and providing access to open space. The district currently features a mix of small-scale retail, light industrial, multi-unit housing, civic, and auto-oriented uses. The Downtown Center is bound by Oregon Highway 99W to the northwest and the Beaverton-Tualatin Highway to the east. These major transportation corridors create severe traffic congestion in the area which discourages visitors, expose residents to harmful emissions, and act as physical barriers, isolating the Downtown Center from the rest of Tigard. An active freight and commuter rail line also bisects the area. Fanno Creek, a tributary of the Tualatin River, runs through the Downtown and directly under to the cleanup project Site.

The existing residential development in the Downtown Center area is primarily low-income multi-unit housing including a mobile home park. Early development practices led to industrial facilities intermixed with residential, resulting in increased health risks to residents. The area lacks a complete sidewalk network and street connectivity, which discourages walking, restricts access to greenspaces, and creates a primary reliance on the automobile for transportation. Many residents have to cross major highways to reach grocery stores and other essential services. The Downtown also has a U.S. Department of Agriculture designated "food desert" (a low-income census tract where a substantial share of residents has low access to a supermarket or large grocery store).

Uncertainty regarding contamination from past economic activity has complicated redevelopment plans in the Downtown Center. The Main Street/Fanno Creek Properties are a quintessential example of this: prominent, blighted property with transformative redevelopment potential that will remain unchanged as long as the contaminants that lie beneath it remain.

ii. Demographic Information – Tigard and Washington County are among Oregon's most ethnically diverse areas. 14.3% of our residents are foreign born, which is greater than Oregon's average of 9.8%. Tigard's diversity can be seen in its school district, where 60 different languages are spoken by students.

The Downtown Center has elevated poverty where families are twice as likely to be living in poverty as compared to the rest of the City. The median income of residents of the Downtown Center is 20% less than the City median income. The area has seen a 20% rise in homelessness since 2008, with the top three factors being unemployment, unaffordable rents and eviction by landlords (*Tigard Times*, December 2012.)

According to EJSCREEN, census block group 410670308014 where the cleanup site is located is in the 81st percentile statewide for the Demographic Index. In addition, statewide it is in the 92nd

percentile for both Minority and Linguistically Isolated populations, and in the 95th percentile for Less than High School Education.

	Downtown Center [1]	Tigard	Washington Co.	Oregon	National
Population	13,470[6]	49,633[2]	547,451[2]	3,900,343[2]	314,107,084[2]
Unemployment	4.0%[5]	4.2%[5]	5.0%[5]	6.0%[5]	5.1%[3]
Poverty Rate	16.1%[5]	10.6%[2]	11.8%[2]	10.8%[2]	11.3%[2]
Families Below Poverty	15.3%[5]	7.4%[2]	8.7%[2]	11.5%[2]	11.5%[2]
Children Below Poverty	20.6%[2]	13.1%[2]	12.9%[2]	18.9%[2]	18.1%[2]
Percent Minority	33.5%[2]	23.4%[2]	31.3%[2]	22.4%[2]	37.2%[2]
Median Household Income	$49,492[7]	$61,758[2]	$65,272[2]	$50,229[2]	$53,046[2]
Percent Renters	56.4%[2]	38.9%[2]	39.4%[2]	38.5%[2]	35.6%[2]

1: Downtown Center is comprised of Census Tracts 309, 307, and 308.01; 2: 2010-2014 American Community Survey Data; 3: Bureau of Labor and Statistics (October 2015); 4: 2008-2012 US Census Data; 5: Oregon Employment Department (November 2015); 6: 2010 Census 7: ESRI Business Analyst

iii. Description of Brownfields – The Agency proposes to clean up two tax lots that comprise the Main Street/Fanno Creek Properties (a.k.a. Saxony-Pacific properties). The proposed cleanup Site is located in Downtown Tigard at a highly visible location where the historic Main Street, comprised of mostly small, locally owned businesses crosses Fanno Creek. The three existing structures on the properties are in poor condition. A building inspector's report noted structural damage, past damage due to water infiltration, and substandard electrical and heating systems. The previous uses include a sawmill, a welding shop, and a printing shop. Adjacent to the properties is a dry cleaner, and a former gas station is located 300 feet to the northeast. This cluster of buildings is the most evident example of blight in the Downtown.

The CCDA acquired the properties (with the protection of a Prospective Purchaser Agreement (PPA) with the Oregon Department of Environmental Quality) for their redevelopment potential. The Site is enrolled in the DEQ Voluntary Cleanup Program (VCP). Once the Site is remediated, it will be redeveloped with public space to create a visual and physical connection to the creek and a new 4-5 story mixed use building. The properties are a major Downtown presence, with over 200 lineal feet of street frontage (about 1/10th of the total frontage on the north side of Main St.). In addition to their visual blight, the existing structures also impede the natural flow of Fanno Creek – one of the buildings stands on piers that are in the creek bed.

During due diligence leading to the property's purchase, hazardous materials were detected in groundwater of the Site. A plume of contamination (solvents), has been identified at concentrations exceeding risk-based criteria; however, this plume has not been completely characterized or delineated. The contamination on the Site has potential environmental risk for both public and ecological receptors. The Site had not previously appeared on any environmental database.

This Site is just one of several properties that are contaminated or potentially contaminated in the Downtown. Previous downtown economic activity included many light industrial uses that took advantage of the area's rail access. Currently there are a disproportionate number of automotive-related businesses as a result of the major transportation corridors enveloping the Downtown.

With funds from the EPA Community-wide Assessment grant, awarded to Tigard in 2014, a citywide inventory was developed from public databases, historic information, field reconnaissance

and public outreach. We identified 199 sites comprising 595.4 acres of known or potential brownfields in the city's industrial, commercial, and mixed use zones. 112 acres are in the 193-acre Downtown Center.

Much groundwork has been laid for downtown redevelopment and improvement; however, a major challenge has been the uncertainty created by known and potential environmental legacies of Downtown Center properties. Citywide, brownfields present an obstacle to the redevelopment of underutilized properties, particularly in its dwindling supply of employment and industrial land, and a barrier to implementing the City's strategic plan to become "the most walkable community in the Pacific Northwest where people of all ages and abilities lead healthy and interconnected lives."

iv. Cumulative Environmental Issues – According to EJSCREEN, this property's census block group (410670308014) is in the 91st percentile nationally in traffic proximity and in the 96th percentile regionally for exposure to PM-2.5 emissions. Much of the particulate matter comes from transportation-related sources: Oregon Highway 99W carries approximately 50,000 trucks, buses and passenger vehicles a day, one of the heaviest traffic volumes on an Oregon state highway. Nearby Interstate 5 and Highway 217 are heavily congested at peak commute times and contribute to poor air quality. Reducing vehicle miles driven by creating jobs within the community for resident citizens is a priority for the Agency. Creating more jobs, public spaces and local transit-oriented housing will help alleviate these health and livability concerns.

Fanno Creek has a long history of flooding, and its waters and sediments contain pollution from historic industrial practices. In addition to the proposed cleanup Site, our inventory identified 10 potential Brownfield properties that border it in the Downtown Center. Two federally-protected species occur near the project: Upper Willamette River (UWR) steelhead distinct population segment, and the UWR spring-run Chinook salmon evolutionarily significant unit. The stigma of contamination inhibits Fanno Creek for recreational enjoyment by citizens, yet does not deter it as an inappropriate source of water, food and shelter for many homeless people in the area.

Hazardous substances known to be present on the Downtown Center Brownfields and throughout the City are EPA priority pollutants. Many are highly carcinogenic, mutagenic and teratogenic, and result in potential negative health impacts to those who live and work in the Downtown Center.

b. Impacts on Targeted Community – Environmental conditions disproportionately affect low-income populations near this site. According to EJSCREEN, EJ Indexes of the Site's census block group in Ozone Levels in the Air, Lead Paint Indicator, Proximity National Priority List Sites, Proximity to Risk Management Plan (RMP) Facilities, and Proximity to Major Direct Dischargers to Water are all at the 80th percentile or above for regional census block groups.

The results of the characterization activities on the Main Street/Fanno Creek Property 1 demonstrate that groundwater and sediment impact at the Site is associated with past releases of contaminants, some of which clearly did not originate on the Site. These releases are believed to have occurred over several decades, with most occurring before 1980. Specifically, contaminants of concern are categorized as follows:

- Halogenated Volatile Organic Compounds (HVOCs) have been detected in groundwater on the upland portion of the Site. The primary HVOC contaminants are tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2DCE), and vinyl chloride (VC); and
- Total petroleum hydrocarbons (TPH), Polynuclear aromatic hydrocarbons (PAHs), metals, and

polychlorinated biphenyls (PCBs) have been detected in sediment along Fanno Creek.

Phase 1 and 2 assessments in Downtown Center with research done for our Brownfields inventory have identified known and potential hazardous materials and petroleum contamination in soil, groundwater and surface waters. The following table identifies example health connections and community concerns related to known and potential Brownfields sites.

Target Examples of Sites	**Contaminants A,B**	**Public Exposures B,C**	**Health Effects C**	**Actually Measured**
Closed Plants/Factories *Target Example 1:* Farmcraft Facility	Hazardous & Petroleum: Pesticides (aldrin, dieldrin, endosulfan, and DDT)	Ingestion, inhalation, direct contact, migration to groundwater, vapor intrusion, stormwater	Cancer; neurological issues; reproductive issues (birth defects and fetal death); and diabetes	Yes, Above ODEQ Risk-Based Cleanup Standards
Flood Properties and Natural Resources *Target Example 2 :* Fanno Creek Watershed sediments	Haz. & Petroleum: unknowns deposited by floodwaters; metals arsenic and lead, the polycyclic aromatic hydrocarbons(PAHs):benz(a)anthracene, benzo(a)pyrene, fluoranthene, and pyrene.	Ingestion, inhalation, direct contact, migration to groundwater, vapor intrusion, stormwater runoff, mobile sediments	Cancer; damage to kidneys; liver; central nervous, circulatory, reproductive, immune, and respiratory systems	Yes
Former & Low- risk Gas/Service Stations *Target Example 3:* Shell Oil.	Hazardous & Petroleum: Fuels, lubricants, asbestos materials, metals, cleaning solvents	Ingestion, inhalation, direct contact,migration to groundwater, vapor intrusion, stormwater	Cancer; renal, central nervous, circulatory, reproductive, and respiratory systems;	Yes, Above ODEQ Risk-Based Cleanup Standards

A. EPA Sector Notebooks on Industry, 1995-2005.
B. Oregon Department of Environmental Quality – Leaking Underground Storage Tank Program and Environmental Cleanup Site Information System, 2013.
C. Agency for Toxic Substance and Disease Registry (ATSDR) ToxFAQs, online 2013.

c. Financial Need

i. Economic Conditions – Brownfields in Tigard have been a recognized issue for many years, but we lacked resources to address them. New City leadership, a recovering economy and renewed commitment to downtown revitalization by property owners have vaulted Brownfields to a high priority. In 2014 the City of Tigard was awarded an EPA Brownfield Assessment grant which provided crucial funding for our Brownfields program. The CCDA seeks to build on this by applying for EPA cleanup grant funding to remediate this key downtown site.

Tigard is limited in its ability to clean up the property without EPA's assistance. Property values stagnated or declined in the great recession. We do not apply directly for Community Development Block Grants (CDBG) for projects to benefit vulnerable resident but compete with other small cities in Washington County for limited county-awarded CDBG funds. With no sales tax in Oregon, we do not have this as a funding source. Funds that could be available from the Business Oregon Brownfields Redevelopment program are not nearly sufficient to make the clean-up project feasible.

In 2006 Tigard voters authorized the City Center Development Agency to implement the City Center Urban Renewal Plan in the Downtown Center by funding revitalization projects such as infrastructure and redevelopment incentives. However, the Agency's resources are constrained currently and for the foreseeable future due to:

- Slow property value growth**:** Urban renewal projects are financed through the tax increment raised in the district from the increase in the district's property values above a frozen base. The current tax increment is only 56% of what was originally projected due to stagnated property values from the economic downturn. In addition, the high prevalence of Brownfields in the

Downtown Center creates a cyclical pattern whereby low levels of redevelopment keep property values and tax revenue down, which limits the Agency's ability to reinvest in the area.

- Limited budget**:** Tigard is the ninth largest in population of the 68 Oregon jurisdictions with urban renewal districts, but the district's maximum indebtedness ($22 million dollars over 20 years) is only the 48th largest in potential funding. Raising the maximum indebtedness would require appealing to voters at a time the economic recovery is still shaky.

Urban renewal funds alone are not adequate to address the downtown Brownfields issues. EPA grant funding will leverage and extend the limited urban renewal funds that are available for revitalization and provide critical funding to cleanup and facilitate the redevelopment of the Site.

ii. Economic Effects of Brownfields – The presence or perceived presence of Brownfields has contributed to Downtown Center properties being underutilized, with lower property values than the rest of the City. Retail lease rates on the Main Street core are 30% lower than the rest of the Tigard market ($12/sq.ft. vs. $17.69/sq.ft.) and vacancy rates are 4 times as high (12% vs. 3.1%) (CoStar Property analytic, Dec. 2015). Property owners often have difficulty financing expansions of businesses where there is contamination. Similarly, developers have hesitated to invest in these properties due to the uncertainties associated with environmental issues.

The 2005 *Report Accompanying the City Center Urban Renewal Plan* documented the presence of blighted areas in downtown Tigard, (a state requirement for forming an urban renewal district). Blight is clearly demonstrated by the area's substandard housing development, underutilized commercial lands and deficiency of public spaces. Despite some progress in implementing the urban renewal plan, it remains underdeveloped and lacks the mix of high-quality commercial, office, residential and public uses suitable for the City's Downtown Center. Downtown properties have a low improvement-to-land value with most properties having improvement values less than two times their land values, and with many with improvement values less than their land values. The expectation is that the commercial hub of a small city would have improvement-to-land ratios in the range of 4 or 5 to 1.

The country's economic downturn that began in 2008 had an adverse impact on the Tigard community. These economic effects are magnified by the presence of Brownfields. While a recovery is slowly improving conditions, long-term unemployment and underemployment remain stubbornly high in Oregon, which currently has the seventh highest unemployment rate nationally. As one example of the precarious recovery, in July 2015 Tigard's largest single private employer, Capitol One Bank, announced the closure of its call center with the loss of 900 jobs. Many of the available jobs in Tigard are in the low-paying retail sector, and there is a dire need to create family wage jobs through redevelopment and expansion of Brownfields properties.

2. PROJECT DESCRIPTION AND FEASIBILITY OF SUCCESS

a. Project Description

i. Existing Conditions – Located at the juncture of Tigard's historic Main Street and the critical natural resource of Fanno Creek, the Main Street/Fanno Creek Site consists of two tax lots, with three dilapidated wood-frame commercial buildings. Main Street/Fanno Creek Property 1 is a 0.32 acre tax lot fronting Fanno Creek. One of the buildings is vacant and projects 50 feet into Fanno Creek, supported by piers in the creek bed. The Site was developed in the 1930s with historic uses that include a sawmill, a welding shop, and a printing shop. Current uses in the two occupied buildings are an automotive repair shop and an embroidery shop. HVOC contaminants (PCE, TCE, cis-1,2- DCE, and vinyl chloride) have been detected in groundwater on the Site's upland portion.

The cleanup and redevelopment of the Main Street/Fanno Creek properties is a unique opportunity to achieve economic, social, and environmental goals in the heart of Downtown Tigard. Currently the Agency is working with community stakeholders and consultants in architecture, real estate economics, and natural resources on specific redevelopment plans for a public space fronting Fanno Creek, a new signature mixed use building to be built by a private developer, and restoration of the vegetated areas. The plans are expected to be finalized and ready for building permits in early spring of 2016. These plans are in full alignment with the ten years of downtown planning and will also further the City of Tigard's adopted strategic plan goal of becoming "the most walkable community in the Pacific Northwest where people of all ages and abilities lead healthy and interconnected lives."

The social benefits include the construction of a public space providing visual and physical access to Fanno Creek. Program elements for the public spaces could include art and natural resources and watershed educational installations. This location is part of a larger urban design plan under consideration that would incorporate the Main Street bridge over Fanno Creek and other adjacent creekfront properties into a larger public plaza to hold community events. Providing public space and recreational opportunities in the Downtown is one of the driving goals of the CCDA.

ii. Proposed Cleanup Plan – The Site has been well-characterized with Phase I and Phase II site assessments, and a Site Characterization Report. The property was acquired with a Prospective Purchaser Agreement (PPA) with the Oregon Department of Environmental Quality, which includes an Easement and Equitable Servitudes (EES) that will run with the land. The end goal is to secure a DEQ "no further action" letter for the Site so it can be redeveloped.

The preferred cleanup plan is Alternative 2 of the ABCA: vapor mitigation (engineering controls), source removal ("hot spot" soil only), institutional controls, and monitored natural attenuation (MNA)) is based upon DEQ requirements identified in the PPA (DEQ, 2015). As required in the PPA, engineering controls consisting of a vapor mitigation system comprised of a network of perforated pipes in trenches, covered with gravel, and overlain by a heavy duty vapor barrier. The system would be passive, allowing accumulated vapors to vent to outdoor air, enhanced through the use of a solar-powered low power fan. Groundwater will be monitored (MNA) to provide a higher degree of confidence as to if exceedance of risk-based concentrations (RBCs) is significant over the longer term and constitutes a continuing risk. Alternative 2 will consist of installing three or four groundwater monitoring wells within the area of the highest detected concentrations of HVOCs (northeastern portion of Site) and up to four quarterly sampling events.

Institutional controls would consist of the same EES that exists for the Site. This would enforce the maintenance of engineering controls and prevent use of groundwater. Prior to building demolition, a contaminated media management plan (CMMP) would be prepared for use by contractors. After building demolition source area "hot spot" soils would be removed and disposed of at an appropriate landfill. Building demolition would need to occur prior to soil removal. Following soil removal, confirmatory soil, soil gas, and groundwater sampling would be performed.

b. Task Description and Budget Table

i. Task Descriptions—

***Task 1 – Grant Implementation*:** Includes the management, implementation and execution of the grant. Limited funding will support project manager labor as liaison between EPA Region 10 and the CCDA and assuring compliance with requirements of the cooperative agreement. Travel

expenses are to attend EPA's national Brownfields Conference and other regional brownfield workshops over the course of the project period to learn best practices and identify ways to leverage EPA resources. The task includes required reporting including updating the ACRES database. Progress will be measured quarterly against output milestones, to ensure that the overall project remains on track. Milestones would include such items as: community involvement meetings, submittal of final Analysis of Brownfield Cleanup Alternatives (ABCA), submittal of Remedial Action Work Plan, preparation of engineering plans and specifications, executing subcontracts with construction firm(s), completion of vapor barrier installation, quarterly groundwater monitoring, and report preparation. Estimated cost is $17,500. The CCDA cost share will be $6,750.

***Task 2 – Community Engagement*:** The CCDA will actively engage residents, property owners, business owners and other stakeholders in gathering input to the Cleanup Plan. This process will be guided through a Public Involvement Plan (PIP) which will be prepared for EPA and DEQ review. The PIP will identify stakeholders, the number, timing and method of publicizing the public meetings. Expenses include materials production, costs for a minimum of three public meetings (including translation), and enhanced online engagement services. The contractual budget is for the development of fact sheets and meeting materials. Estimated cost for contractual services (based on implementation of the Assessment Grant to date, and an average contractor billing rate of $125/hours with $125 of miscellaneous expenses, will be $9,500 (75 hours @ $125 +$125= $9,500.) An additional $13,500 in personnel expenses is estimated. The CCDA cost share will be $6,750.

Task 3 – Clean-up Planning: The Site is enrolled in the DEQ Voluntary Cleanup Program (VCP), and the Agency will work closely with EPA and DEQ to ensure a rigorous planning process that will result in a successful project outcome. The first subtask will be a final ABCA document, which will incorporate EPA and DEQ comments and input provided by the public. Following approval of the final ABCA by EPA and the DEQ, the next subtasks will consist of preparation of draft and final versions of a Remedial Action Work Plan, preparation of the Remedial Design (RD) plans and specifications, and preparation of bidding documents. The Work Plan will cover all aspects of the cleanup process, including objectives, approach, safety considerations, timelines for the soil removal and transport, stormwater management during construction activities, and infrastructure installation. Because the Site will be used as a public space, public confidence in the adequacy of the cleanup is paramount.

A robust Quality Assurance/Quality Control (QA/QC) process will be implemented. This will include preparation of a Quality Assurance Project Plan (QAAP) and Sampling and Analysis Plan (SAP), which will cover all project sampling activities. In addition, a site specific Health and Safety Plan (HASP) will be prepared. Prior to building demolition, a contaminated media management plan (CMMP) will be prepared for use by construction subcontractors. This Clean-up Planning task will be led by the selected contractor with oversight from the Agency's project manager. Estimated cost (based on two rounds of EPA and DEQ comments per document, and an average contractor billing rate of $125/hours, will be (160 hours @ 125 hours = $20,000).

Task 4 – Clean-up Performance and Completion: The cleanup task will be led by the selected contractor with oversight from the Agency's project manager. The preferred cleanup remedy is Alternative 2 from the ABCA and is based upon DEQ requirements in the PPA.

As required in the PPA, engineering controls (an estimated 7,000 square foot vapor mitigation system comprised of a network of perforated pipes in trenches, covered with gravel, and overlain by

a heavy duty vapor barrier) will be installed. The passive system will allow accumulated vapors to vent outdoors, filtered by granulated carbon canisters. A solar-powered low-power fan will improve the efficiency of the system and support the goal of using sustainable processes.

"Hot spot" soils will be removed and disposed of at an appropriate landfill (likely Subtitle D). Building demolition is necessary to access the soils. The demolition of the structures is expected to be complex and will require rigorous regulatory oversight, as one of the buildings is supported by piers in the creek. Approximately 100 cubic yards of soil will likely be removed. Subsequently, confirmatory soil sampling will be performed. Groundwater monitoring (MNA) will then be implemented. There will be three or four groundwater monitoring wells within the area of the highest detected concentrations of HVOCs, and four quarterly sampling events. After receipt of lab data, reports will include a discussion of field activities, copies of analytical reports, and tables and graphs (for ease in tracking cleanup progress).

The cleanup task outlined above includes preparation of a comprehensive Cleanup Completion Report at the end of groundwater monitoring. Estimated cost (based on RS Means Heavy Construction Cost Data (2013)) and two rounds of regulator comments for each report is a total of $182,500 of which $142,500 would be funded through the EPA grant with a $40,000 Agency contribution. This budget includes hot-spot soil removal; installation of the vapor barrier and groundwater monitoring wells; confirmatory sampling, and all required reports.

Task 5 – Institutional Controls and Residual Risk Assessment: Institutional controls will consist of the same Easement and Equitable Servitude (EES) that currently exists for the Site. This will enforce the maintenance of engineering controls and prevent use of groundwater. The CMMP will be updated, as necessary, for use by future contractors. Following completion of the groundwater monitoring/MNA, a Residual Risk Assessment will be completed for soil and groundwater at the Site, and a final Summary Report will be prepared. It is anticipated that following the completion of this task that the DEQ will issue a No Further Action (NFA) finding for the Site. Estimated cost (based on two rounds of EPA and DEQ comments on the documents, and an average contractor billing rate of $125/hour, will be $10,000.)

ii. Budget Table—

Budget Categories	**Project Tasks**					
	Task 1- Grant Imp.	**Task 2- Community Engagement**	**Task 3- Cleanup Planning**	**Task 4- Cleanup**	**Task 5- Risk Assessment & Institutional Controls**	**Total**
Personnel	$5,000	$5,000				**$10,000**
Fringe Benefits[1]	$1,750	$1,750				**$3,500**
Travel[2]	$4,000					**$4,000**
Supplies		$500				**$500**
Contractual[3]		$9,500	$20,000	$142,500	$10,000	**$182,000**
EPA Grant	$10,750	$16,750	$20,000	$142,500	$10,000	**$200,000**
Cost Share	**$6,750**	**$6,750**		**$40,000**		**$53,500**
Total Budget	**$17,500**	**$23,500**	**$20,000**	**$182,500**	**$10,000**	**$253,500**

[1]City's Fringe Benefit Rate is 35%. [2]Travel to Brownfields-related training conferences is an acceptable use of grant funds
[3]The CCDA has and will comply with the procurement procedures contained in 40 CFR 31.36.

The budget for this project includes funding for grant implementation, community engagement, cleanup planning, cleanup, and follow-up risk assessment and institutional controls. The table shows the budget breakdown.

c. Ability to Leverage – EPA Brownfields funding will build on significant investment in public funds that have been, or will soon be, made in the following areas:

- Sustainable infrastructure: The City/CCDA have invested substantial funds in sustainable infrastructure to protect the vulnerable Fanno Creek watershed, including a 2011 $7 million reconstruction of Burnham Street and a 2014 $3.7 million green street project which included the frontage of the Site. $2.2 million is committed for a future phase 2 for the rest of Main Street.
- Open Space Funding: City Park funds will be used to construct the envisioned public space on this site. A partnership with the county water utility will restore natural vegetation and wildlife habitat on a section of Fanno Creek (1/4 mile from the Site).
- Urban renewal funds/ Tax Increment Financing: The CCDA is contributing to the redevelopment of the Site through $111,000 for pre-development activities, including site design, pro forma development and environmental and land use permitting. $13,500 in voluntary cost sharing for the cleanup project will also be contributed. In addition, the CCDA has funded about $1.5 million in infrastructure projects in the Downtown.
- Trail improvements: In 2014 Tigard completed a Fanno Creek Trail segment directly across from the Site to connect walkers and cyclists to parks, schools, and businesses. The City has applied for a $700,000 Oregon Department of Transportation grant to build a ¾ mile multi-use off-street path, with public spaces in an unused rail right-of-way that starts in Downtown.
- Street improvements: In 2011 the state, county and City partnered to complete two major intersection improvements projects ($12 million combined) on Highway 99W within the Downtown that have reduced some traffic congestion.
- Metro grants: In 2013 and 2015 the Agency was awarded $100,000 Community Development and Planning grants from the Metro regional government to undertake redevelopment feasibility studies for new Downtown transit-oriented housing on sites that have known contamination.
- Business Oregon Brownfields Redevelopment Program grant: In 2013, the City was awarded $25,000 to fund Brownfields initiative start-up activities.
- Brownfields Public Health: Oregon Health Authority's (OHA) Environmental Health Assessment Program funded by ATSDR APPLETREE will support the cleanup project by providing health risk assessments. The Washington County Department of Health was awarded a $12,500 OHA grant to undertake capacity building for public health involvement in Tigard Brownfield revitalization efforts.
- Private Investment: EPA funds will leverage downtown private investment such as a 2011 47-unit affordable senior housing project and a $30 million 165–unit transit-oriented mixed-use project that just broke ground a quarter mile from the Site.

Other opportunities: Should we be awarded EPA grant funding it would seek to further leverage other opportunities including:

- Oregon Watershed Enhancement Board grants for restoration of the degraded creek banks.
- National Endowment for the Arts Our Town Grant: to integrate art, nature and placemaking into the public space design.
- CDBG: Tigard will compete for county CDBG funds to build sidewalk connections and other infrastructure development that supports affordable housing in the Downtown.

- TIGER/Sustainable Transportation Grants: To further its Strategic Plan, Tigard will investigate funding from DOT and the Oregon Department of Transportation, to help develop Complete Streets and promote walkability in the area.
- Foundations: Tigard may seek funding from foundations to improve the quality of life in low-income communities in the downtown and to further its strategic plan focused on walkability.

3. **COMMUNITY ENGAGEMENT AND PARTNERSHIPS**

a. **Plan for Involving Targeted Community & Other Stakeholders and Communicating Project Progress** – The Tigard Downtown Improvement Plan, the blueprint for downtown redevelopment, was the result of a substantial public involvement effort, with input from 1,300 community members. The CCDA will continue to actively engage the public in the cleanup and redevelopment, including a design charrette to refine the public space plans.

Building on the public engagement done for Tigard's EPA Brownfield Assessment grant project, we will continue to communicate with the community through meetings, presentations to the Community Organization listed in 3.c., community listening sessions, newsletters, websites, online engagement and social media, and other communication vehicles. Many of these organizations represent and work with residents and workers who are affected and will benefit most from this project. Written outreach materials will be translated into Spanish and Vietnamese. Community engagement consultants will be hired to improve outreach to disadvantaged communities.

b. **Partnerships with Govt. Agencies** – With the Brownfields grant we will continue to enhance our relationships and partnerships with local and State agencies. Tigard has an ongoing relationship with the **EPA** through our Brownfield Assessment Grant which is in its 18th month of progress.

Tigard is working cooperatively on Assessment grant funded activities with the **Oregon Department of Environmental Quality (DEQ)**. Rebecca Wells-Albers, DEQ's Northwest Region Brownfields Coordinator, serves on the project's technical advisory team. We worked with DEQ on the Prospective Purchaser Agreement developed to acquire the site. DEQ will continue monitoring during the cleanup activities and to obtain the No Further Action Letter.

The **Oregon Health Authority's** Environmental Health Assessment Program will serve as a resource to the project by providing additional site specific toxicology, health risk assessment, health education, and community engagement assistance.

Business Oregon, the state's economic development agency, awarded the City of Tigard a grant in 2013 which allowed it to complete a brownfields inventory, two public workshops, and two Phase I ESA's. The CCDA will work with Business Oregon to determine if there are opportunities to utilize its Infrastructure Financing Programs, Brownfields Redevelopment Program, and Business Financing Programs for this redevelopment.

The CCDA has an active partnership with **Metro**, the directly elected regional government of the Portland metropolitan area. Tigard has participated on Metro's technical advisory committee for a regional Brownfield policy approach. Metro will provide technical assistance for this project.

Clean Water Services, Washington County's water resources management utility, is actively partnering with the Agency on the design of the public space with an envisioned watershed educational component and on restoring the degraded creek banks on the Site. The Agency will also

work with the **Federal Emergency Management Agency, Army Corps of Engineers, and the Division of State Lands,** on the site demolition and redevelopment plans.

c. **Partnerships with Community Organizations** – Tigard is engaging with the following community-based organizations on the project:

- The CCDA will partner with **Portland Community College** and **Oregon Tradeswomen, Inc.** (a current EPA Environmental Worker Training grant recipient) on environmental internships/mentorships and workforce development opportunities for community members.
- A non-profit representing stakeholders advocating for Downtown revitalization—the **Tigard Downtown Alliance**—will provide time at their meetings for project updates.
- Business associations such as the **Tigard Area Chamber of Commerce**, and the **Hispanic Metropolitan Chamber** will publicize the program and support the CCDA's efforts to attract developers and businesses.
- Non-profit brownfields experts like **Groundwork Portland** will serve as a resource for using an accessible and equitable process and innovative engagement methods.
- Environmental organizations such as the **Tualatin Riverkeepers** will provide community involvement through outreach and dissemination of project information.
- **Community Partners for Affordable Housing** will build community support and provide meeting rooms for community meetings.
- Community non-profit organizations such as the **Tigard Area Farmers Market** will offer project communication at their events.
- Members of the **Neighborhood Involvement Committee** and the **City Center Advisory Commission**, which represents residents and stakeholders closest to the cleanup site will help conduct outreach and gather input within their communities.

4. PROJECT BENEFITS

a. Health and/or Welfare and Environment Benefits

i. Health and/or Welfare Benefits – A cleaned up and redeveloped Main Street/ Fanno Creek Site will result in expanded access to open space and restored natural resources and particularly benefit nearby residents who have a higher rate of poverty than the rest of the city. *The Burden of Asthma in Oregon* found 17.8 % of Washington County Oregon Health Plan members with persistent asthma went to the emergency department in the study year, higher than the State average. Less exposure to contamination may help reduce asthma incidence. A revitalized and walkable downtown will be able to provide residents convenient shopping, services, and recreation, with a development pattern that supports alternatives to automobile driving (and resulting in lower emissions).

During the assessment and cleanup work, our contractor will prepare a health & safety plan that will protect workers, nearby residents, and sensitive populations from exposure to contamination. Specific procedures will be followed to reduce or eliminate the potential exposure to contamination, including the containerizing of drilling spoils and contaminated groundwater, and use of granular activated carbon for extracted vapors. Dust control measures will be implemented to protect individuals from contaminant or dust exposure. Assessment and cleanup work will include land use controls, such as fencing to prevent exposure to contamination. On-site activities will be restricted to daytime working hours to limit noise exposure. We will coordinate with DEQ and EPA so that appropriate protection is provided for sensitive populations during activities, and require sampling & analysis plans and the ABCA to outline the steps that will be taken to protect sensitive populations.

No residents will be displaced during cleanup, or after redevelopment. The Agency will continue to integrate equitable development principles into remediation planning and site reuse.

ii. Environmental Benefits – EPA funding will enable removal of contaminants on the Main Street/Fanno Creek properties and limit exposure to carcinogenic, mutagenic and teratogenic substances, particularly to vulnerable populations such as children, the elderly, and pregnant women. Eliminating the potential for upland contaminants to flow down gradient and enter Fanno Creek will support the community's larger goal of restoring the Fanno Creek watershed.

The project will protect and enhance Fanno Creek which flows by and under one of the buildings on the Site. Fanno Creek is a 303(d) listed water body impacted by stormwater runoff with 10 potential Brownfield sites located adjacent to it. Site assessments (some of which were performed with EPA Assessment grant funds) detected TPH, PAHs, metals and PCBs in creek sediments (although no indication that the property was currently contributing to this). Cleanup of properties along Fanno Creek is critical to the process of restoring this important watershed. As part of the proposed cleanup for the subject site, the most significantly contaminated upland soils would be removed, thereby reducing the possibility of continued and/or re-contamination of the creek. The envisioned new building will include low impact development features and on-site innovative stormwater treatment facilities. The redevelopment would also include a restoration and replanting of the creek banks, removal of invasive species, and improvement of threatened salmonid habitat.

Air quality is a major concern due to the presence of major transportation corridors in the Downtown Center. 87% of employed residents commute outside the City and 92% of Tigard workers commute in. The creation of more jobs within the Downtown Center and construction of transit oriented housing will allow workers to live closer to where they work, reducing vehicle traffic and improving air quality, particularly in the Downtown which has some of the highest exposures to PM-2.5 emissions in the region (EJSCREEN). Clean-up of the Site will address blight and catalyze new development that is consistent with HUD-DOT-EPA Livability Principles.

b. **Environmental Benefits from Infrastructure Reuse/Sustainable Reuse**

i. Policies, Planning, or Other Tools – Tigard's downtown planning and implementation have focused on green infrastructure, most significantly the $3.7 million Main Street green street (completed in 2014) project which fronts the Site. The project included green streetscape planters that remove pollutants from stormwater into Fanno Creek, pedestrian safety features, street furniture and LED streetlights. The nearby $7 million reconstruction of Burnham Street completed in 2011 included all of these features and the construction of 10-18 foot sidewalks to encourage strolling. Redevelopment of this Site allows the reuse of existing streets, sewer lines and other infrastructure, saving resources and reducing the costs of redevelopment. The redevelopment of these properties will also:

- Expand parks and open space, to improve air and water quality, and enhance quality of life.
- Implement low-impact development to prevent stormwater run-off.
- Include working with developers to install efficient electrical, heating and cooling systems in new facilities, and build retrofits to help reduce Tigard's carbon footprint.
- Include the recycling of deconstructed building materials.

ii. Integrating Equitable Development and Livability Principles – The proposed cleanup and redevelopment of Main Street/Fanno Creek Property 1 is strongly consistent with the Livability

Principles. The City and its community members have spent many years of visioning and planning downtown revitalization, including the public processes that have led to the Tigard Downtown Improvement Plan, the voter-approved City Center Urban Renewal Plan, and the Fanno Creek Park and Plaza Master Plan. Downtown is envisioned as Tigard's "green heart," accessible by all modes of transportation, with increased access to public space and restoration of the Fanno Creek natural resource. The CCDA's redevelopment strategy is to incentivize new development and implement the 36 urban renewal plan projects. These strategic projects will catalyze redevelopment and create a thriving core, with a mix of residential, employment, and recreational uses.

The desired ground floor of the new building will be a food incubator or other food-oriented business. The upper floors may be creative office space or housing. New housing would provide for a range of housing types, including affordable, market-rate, and workforce housing in a high-quality living environment convenient to transit. Downtown Tigard was identified as a potential station area for High Capacity Transit in the Southwest Corridor, which is currently being planned regionally. Downtown Tigard is also designated by Metro (the Portland metropolitan area's regional government) as a Town Center (an area to focus growth).

c. Economic and Community Benefits (long-term benefits)

i. Economic or Other Benefits – Redevelopment of the Main Street/Fanno Creek Site will expand Tigard's tax base. The replacement of underutilized and dilapidated structures that depress surrounding property values with a new mixed-use building, will stimulate further downtown redevelopment, reduce vacancies, and help accomplish the community and economic development goals of attracting more family wage jobs and affordable housing options in an area with superior access to public transit. It is estimated that the new building would generate 10 times the amount of property taxes previously generated from the site in 2014. Much of this value would be collected in TIF which provides the funds to further implement the urban renewal.

One potential use for the Site is a food business incubator. Tigard is working with a team of local food entrepreneurs on a project called "Tigard's Table". One part of this public private partnership includes cultivating innovators in this locally nascent industry through a business incubator, micro-restaurants and shared commercial kitchen innovation center. The redevelopment of the Site will catalyze further downtown revitalization and improve employment opportunities for local residents.

The Portland region's urban growth boundary encourages cities to develop and redevelop land within their boundaries, rather than annex undeveloped land. Lack of available land and infrastructure make it unlikely that Tigard will be able to annex new employment land, so it must focus its efforts on sustainable redevelopment of sites, which is typically more complex.

ii. Job Creation Potential: Partnerships with Workforce Development Programs – When opportunities arise, and depending upon safety requirements, job-shadowing opportunities will be provided to members of the local community. Job-shadowing will allow members of the local community to learn/develop environmental science skills that can be put towards a career in the environmental sciences field. For example, during contractor collection of soil gas and groundwater monitoring well samples, the Agency commits that job-shadowing opportunities will be made available to students of Oregon Tradeswomen, Inc., the EPA workforce grantee.

The resulting new development will result in new jobs, not only in construction. The proposed food incubator use would foster entrepreneurship in the food field, which would expand employment.

5. PROGRAMMATIC CAPABILITY AND PAST PERFORMANCE

a. Programmatic Capability – The EPA Brownfields cleanup project will be supervised by Kenny Asher, Tigard's Community Development Director. Kenny has more than 15 years of local government management experience. Sean Farrelly, the CCDA's Redevelopment Project Manager, will provide day-to-day management of the project. He has ten years of community and economic development experience and manages the CCDA's urban renewal efforts and its current EPA Community-wide assessment grant. Sean has a Masters of Urban Planning from Portland State University. Sean will serve as a liaison between EPA Region 10 and the CCDA, and will be responsible for assuring compliance with the administrative and reporting requirements of the agreement. He will lead all of the community engagement activities for the grant, and will be responsible for managing paid consultants. Sean will be assisted by the following staff:

- Lloyd Purdy, the Economic Development Manager, manages citywide economic programs.
- Lori Faha, the City Engineer, heads the capital improvements program for the city and CCDA.
- Toby LaFrance, the Finance Director, will oversee financial reporting and federal grant compliance under the Single Audit Act and OMB Circular A-133.
- Dan Olsen and Chris Reive, the contract Agency Attorneys, will provide legal expertise on public contracts and compliance with the easement and equitable servitude from the PPA.

Should the need arise to recruit new staff to work on the project, Tigard will seek candidates with experience in Brownfields redevelopment. Hiring for open positions will be expedited to ensure the team is running at full strength.

Acquiring Additional Expertise and Resources – Within three months of grant award, the CCDA will hire qualified consultants to: assist in community engagement activities; develop clean-up plans and implement the cleanup. These services will be solicited using standard procurement practices consistent with the EPA Cooperative Agreement. Our established procedures include seeking statements of qualifications and price proposals that are reviewed by the CCDA Executive Director and staff (contracts under $100,000) or the Local Contract Review Board (contracts over $100,000). Contractors who submit the lowest bona fide bids and are considered to be fully responsible and qualified to perform the work will be selected.

b. Audit Findings – TCCDA has an exemplary history of managing Federal, state and regional grants. Neither the CCDA nor the City of Tigard has ever received adverse audit findings.

c.i. Past Performance and Accomplishments of EPA Brownfields Assessment Grant

The CCDA is a legally distinct entity from the City of Tigard, but shares the key staff and leadership which has been implementing the EPA Brownfields Community-Wide Assessment grant.

1. Compliance with Grant Requirements – In May 2014, the EPA Brownfields program awarded two $200,000 Community-Wide Assessment grants (hazardous substances and petroleum) to the City. The grant funds are scheduled to be expended by July 6, 2017. Tigard is currently making excellent progress towards achieving its goals set out in the Assessment grant cooperative work plan (approximately 20% of the grant funds have been expended). Timely and accurate quarterly reports have been submitted to the EPA. Properties that are receiving grant assistance have been entered into ACRES. Tigard will expend the remaining grant funds for public involvement, Phase 1 and 2 assessments and clean up planning.

The assessment grant enabled Tigard to strengthen its Brownfields initiative and engage with the

community. Grant funding also assisted in gathering the data that led to the acquisition of the Fanno Creek/Main Street properties through a Prospective Purchaser Agreement. The cleanup grant will make the redevelopment of the property possible and leverage the funds that have been expended by the EPA, City, and the CCDA.

2. Accomplishments – Since project startup the project has accomplished the following:
Public Engagement – An eleven member Citizen Engagement Team (CET) was convened to provide public input in to the grant-funded activities. The CET includes representatives of local immigrant communities, Tigard boards and committees and members of the Tualatin Riverkeepers.

Extensive communication and community outreach has occurred through the creation of a Brownfields webpage, a fact sheet translated into Spanish and Vietnamese, door-to-door outreach with 30 mainly minority-owned Downtown businesses, and a meeting with bankers, brokers and architects to discuss how the program could facilitate potential redevelopment or business expansion.

Two public meetings were held in October 2015. The first was an overview of the Brownfields program with guest speakers from DEQ and Washington County Health. Feedback included comments that Brownfield redevelopment should help achieve goals such as: community centers where diverse community members can gather (i.e. immigrants, refugees, people of color, low-income community), affordable housing, parks, small business development and protecting people who live near Brownfields. The second meeting was tailored to business and property owners and how to access grant funding. Guest speakers included an environmental attorney and DEQ and Business Oregon staff. One direct outcome of the meeting was a downtown property owner applying for a Phase I ESA in support of a potential redevelopment.

Site Inventory – Grant consultant reviewed environmental databases to determine potential opportunity sites and map them. The economic, environmental and equity criteria refined by the CET was used to prioritize the approximately 199 sites into a ranked inventory. Staff and consultant will engage with property and business owners, developers and the community over the next several months to encourage participation in the program.

Site Characterization – A site characterization report on the Main Street/Fanno Creek properties was completed using grant funds prior to acquisition in pursuit of the PPA. A Phase I ESA for a downtown property on the inventory is underway. These properties have been entered into ACRES.

Job Creation and Mentoring – As a result of public engagement activities a recent immigrant from Iran was offered a job shadowing opportunity with the city's environmental consultant. The firm later hired her. The consultant has also offered free HAZWOPER training to students with Oregon Tradeswomen, Inc. (a current EPA Environmental Worker Training grant recipient.)

Main Street/Fanno Creek Properties
Envisioned Redevelopment

RESOLVE
ARCHITECTURE + PLANNING

City Center Development Agency of the City of Tigard, OR

Application for FY16 EPA Brownfields Cleanup Grant

Main Street/Fanno Creek Property 1

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ATTACHMENT A:

THRESHOLD CRITERIA

III.C. THRESHOLD CRITERIA FOR CLEANUP GRANTS

1. Applicant Eligibility

a. Eligible Entity: The City Center Development Agency (CCDA) is the urban renewal agency of the City of Tigard, a public body corporate and politic formed under Oregon Revised Statutes 457.

b. Site Ownership: The City Center Development Agency currently owns the subject property.

2. Letter from State Environmental Authority

See Attachment B.

3. Site Eligibility

a. Basic Site Information

(a) Name: Main Street/Fanno Creek (aka Saxony-Pacific) Property 1

(b) Address: 12535 SW Main Street, Tigard, OR 97223 (tax lot 2S102AB02000)

(c) Current Owner of Site: City Center Development Agency

b. Status and History of Contamination at the Site:

(a) Petroleum or Hazardous Substance Contamination: Hazardous Substances

(b) Operational History and Current Use of the Site: The property is located in the Tigard's historic downtown district. Property 1 is a 0.32 acre tax lot fronting Fanno Creek. The site consists of three dilapidated wood-frame commercial buildings. One of the buildings is vacant and projects 50 feet into Fanno Creek, supported by piers in the creek bed. The Site was developed in the 1930s with historic uses that include a sawmill, a welding shop, and a printing shop. Current uses in the two occupied buildings are an automotive repair shop, an embroidery shop, and a nail salon.

(c) Environmental Concerns: Several investigations have been conducted at the site. Investigations detected that Halogenated Volatile Organic Compounds (HVOCs) have been detected in groundwater on the upland portion of the Site. The primary HVOC contaminants are tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2DCE), and vinyl chloride (VC). Total petroleum hydrocarbons (TPH), Polynuclear aromatic hydrocarbons (PAHs), metals, and polychlorinated biphenyls (PCBs) have been detected in sediment along and within Fanno Creek.

(d) How the Site became Contaminated and Nature and Extent of Contamination: The site was historically used by several commercial tenants that may have used hazardous substances as part of their business operations, however some of contaminant clearly did not originate on the site. These releases are believed to have occurred over several decades, with most occurring before 1980. A groundwater plume of contamination (solvents), has been identified at concentrations exceeding risk-based criteria; however, this plume has not been completely characterized or delineated. The contamination on the Site has potential environmental risk for both public and ecological receptors. Both groundwater and subsurface soils are contaminated and the contamination is limited to the site.

c. Sites Ineligible for Funding: The site is not listed or proposed for listing on the National Priority List; not subject to unilateral administrative orders, court orders, administrative orders on consent, or judicial consent decrees issued to or entered into by parties under CERCLA; and not subject to the jurisdiction, custody, or control of the U.S. government.

d. Sites Requiring a Property-Specific Determination: A property-specific determination is not required for this site.

e. Environmental Assessment Required for Cleanup Proposals: Phase II Subsurface Investigations were conducted on the Main Street/Fanno Creek Property 1 site and reports were produced on November 26, 2012 and May 30, 2013. A Site Characterization Report dated September 26, 2014 was also commissioned.

f. CERCLA §107 Liability: The Agency is not potentially liable for contamination at the site under CERCLA §107 under the bona fide prospective purchaser protection. A Phase I environmental site assessment completed according to ASTM E-1527-13 was conducted November 17, 2015 by Amec Foster Wheeler.

Prior to the City of Tigard acquisition of the property in July, 2015, it spent a 15-month process working closely with the Oregon Department of Environmental Quality (DEQ) on obtaining a Prospective Purchaser Agreement (PPA). It obtained the most rigorous protection available, a Consent Judgment so a court could enforce the PPA. The agreement (DEQ PPA 14-05) dated May 28, 2015, includes an Easement and Equitable Servitudes that runs with the land that memorializes institutional controls, including requirements for future testing and remediation.

On December 1, 2015 DEQ approved the transfer, assumption and assignment of the City's PPA to the CCDA.

g. Enforcement or Other Actions: There are no known ongoing or anticipated enforcement or other legal actions related to the site.

h. Information on Liability and Defenses/Protections

i) Information on the Property Acquisition:

1. How ownership was acquired: By purchase and sale agreement from another governmental unit- the City of Tigard. The CCDA acquired the property from the City to allow flexibility in redeveloping the property.
2. Date property was acquired: December 14, 2015
3. Nature of ownership: Fee simple
4. Name of party from whom site was acquired: The CCDA acquired the property from the City of Tigard. The City of Tigard acquired the property in July, 2015 from Saxony-Pacific, LLC.
5. Relationships: The Agency is a distinct legal entity from the City of Tigard, however as is common, the entities share key staff. The Oregon Court of Appeals consistently has held that "urban renewal agencies are separate from the cities and counties that authorize their establishment and in which they exercise their responsibilities." The City and Agency do not and have not had any relationships with Saxony-Pacific, LLC or any of the previous owners of the site.

ii) Timing and/or contribution Toward Hazardous Substances Disposal:
Disposal of all hazardous substances occurred prior to the Agency acquiring the property and the Agency has not caused or contributed to any release of hazardous substances at the site. The Agency has not arranged for the disposal of hazardous substances at the site or transported hazardous substances to the site.

iii) Pre-Purchase Inquiry:

1. All assessment activities were conducted prior to the Agency acquiring the property.

- ASTM Phase I investigation– dated November 17, 2015– commissioned by the City Center Development Agency
- Phase I Environmental Site Assessment dated October 19, 2012; commissioned by the City of Tigard
- Phase II Subsurface Investigation dated November 26, 2012; commissioned by the City of Tigard
- Phase II Subsurface Investigation dated May 30, 2013; commissioned by the City of Tigard
- Site Characterization Report dated September 26, 2014; commissioned by the City of Tigard.
- Prospective Purchaser Agreement (DEQ PPA 14-05) dated May 28, 2015, includes an Easement and Equitable Servitudes that runs with the land that memorializes institutional controls, including requirements for future testing and remediation.
- Entered DEQ Voluntary Cleanup Program – May 13, 2014– DEQ reviewed past documents and searched its records to gather information to provide its perspective of site environmental conditions and recommendations for future work.
- Final title reports were pulled and reviewed, December 14, 2015 at close of sale.

2. The November 17, 2015 ASTM Phase I was conducted by Amec Foster Wheeler. Specifically, Ms. Jennifer Kuiper conducted the Phase I investigation with Mr. John Kuiper serving as reviewer. Both are registered geologists with over 25 years of experience.

3. The November 17, 2015 ASTM Phase I investigation was conducted as part of a Purchase and Sale Agreement between the Agency and the City. It was conducted less than 180 days prior to acquisition of the property.

iv) Post-Acquisition Uses: Upon acquisition three current leases on the property were assigned to the CCDA. All three leases will expire July 31, 2016, before the cleanup project commences.
-Lease 1: Domestic Lines is an automotive repair shop. The lease was in place several years prior to Agency and City acquisition.
-Lease 2: Hillers Emblem Shop is a custom embroidery shop. The lease was in place several years prior to Agency and City acquisition
-Lease 3: Jessica Rutherford. A month to month lease for a nail salon has been in place since September, 2015. This a temporary arrangement while her shop next door undergoes repairs due to fire damage.

The Agency has a landlord relationship with the tenants.

v) Continuing Obligations:

- No known continuing releases are present at the site. The property is managed by staff who regularly visit the property. The leases that are in place all have language requiring the lessee to comply with all applicable federal, state, and local environmental laws, regulations and ordinances. The lease also includes language that the lessee "shall not release, discharge, generate or, other than fuel and other substances used in the permitted use of the Premises, permanently store, any Hazardous Materials on the Premises."
- Prospective Purchaser Agreement (DEQ PPA14-05) with DEQ dated May 28, 2015, includes an Easement and Equitable Servitudes that runs with the land that memorializes institutional controls, including requirements for future testing and remediation.
- The City entered into a letter agreement with the Oregon Department of Environmental Quality on May 13, 2014 for regulatory oversight under ODEQ's Voluntary Cleanup Program.
- Prior to building demolition, a contaminated media management plan (CMMP) would be prepared for use by contractors. Fencing will be maintained around the site during the cleanup project to prevent public access. The EES will prevent the use of groundwater on the site.

The Agency confirms its commitment to:

- Comply with all land-use restrictions and institutional controls;
- Assist and cooperate with those performing the cleanup and provide access to the property;
- Comply with all information requests and administrative subpoenas that have or may be issued in connection with the property; and,
- Provide all legally required notices.

4. Cleanup Authority and Oversight Structure

a. The property is enrolled in the Oregon DEQ Voluntary Cleanup Program and DEQ will provide oversight for the cleanup. The CCDA will use a competitive procurement process to select contractors who will have the required technical expertise. The CCDA will manage the contractors and work closely with EPA and Oregon DEQ to ensure a successful cleanup project outcome.

b. It is unlikely that access to neighboring properties will be necessary to clean up the property. If the need arises, the Agency would negotiate a temporary construction easement with the neighboring property owner.

5. Statutory Cost Share

The CCDA's cost share will be $53,500, which is higher than the required 20% cost share. The cost share will go toward eligible and allowable expenses. $40,000 would be contributed toward contractual work for Task 4: Clean-up. $13,500 would be contributed in agency staff time (personnel and fringe benefits) for Task 1: Grant Implementation and Task 2: Community Engagement. The funding source is CCDA funds.

ATTACHMENT B:

LETTER FROM STATE ENVIRONMENTAL AUTHORITY

Oregon
Kate Brown, Governor

Department of Environmental Quality
Northwest Region
700 NE Multnomah Street, Suite 600
Portland, OR 97232
(503) 229-5263
FAX (503) 229-6945
TTY 711

December 7, 2015

City Center Development Agency
Attn: Sean Farrelly, Redevelopment Project Manager
13125 SW Hall Boulevard
Tigard, OR 97212

Re: DEQ Support for the Tigard City Center Development Agency's Applications for Brownfield Cleanup Grants

Dear Sean:

The Oregon Department of Environmental Quality (DEQ) acknowledges and supports the Tigard City Center Development Agency (CCDA) applications for two Cleanup Grants at the Main Street/Fanno Creek Properties, located in downtown Tigard. The properties are located adjacent to Fanno Creek and within the City Center Urban Renewal Area, which is designated as an area that is underdeveloped and lacks a mix of high quality commercial, office, residential and public uses for Tigard's Central Business District.

If awarded the EPA grant, the CCDA will complete the remedial design and remedial actions for the two properties that are presented in the May 2015 Scope of Work for the Prospective Purchaser Agreement with DEQ. The actions include the installation of a vapor mitigation system, conducting additional soil, groundwater, and soil vapor sampling, and development and implementation of a contaminated media management plan prior to site redevelopment. DEQ's Voluntary Cleanup Program has conducted environmental oversight at the properties since 2014 and supports the CCDA's desire to address legacy contamination that will protect human health and the environment and support revitalization efforts in downtown Tigard.

DEQ recognizes the vital role brownfield redevelopment plays in promoting economic stability, encouraging community pride, and protecting human health and the environment. Therefore, DEQ supports the CCDA's application for the EPA Brownfield Grants. Please feel free to contact Rebecca Wells-Albers, DEQ Northwest Region Brownfield Coordinator at 503-229-5585 if you have any questions.

Sincerely,

Nina DeConcini

Nina DeConcini
Administrator, DEQ Northwest Region

Cc (e-mail): Rebecca Wells-Albers, NWR/DEQ
Keith Johnson, NWR/DEQ
Gil Wistar, HQ/DEQ
Robert Williams, NWR/DEQ
Cheryl Grabham, NWR/DEQ

ATTACHMENT C:

LETTERS OF COMMITMENT

Community Organizations

1. Oregon Tradeswomen, Inc.
2. Portland Community College
3. Groundwork Portland
4. Tigard Downtown Alliance
5. Tigard Area Chamber of Commerce
6. Hispanic Metropolitan Chamber
7. Westside Economic Alliance
8. Tualatin Riverkeepers
9. Community Partners for Affordable Housing
10. Tigard Area Farmers Market
11. Neighborhood Involvement Committee
12. City Center Advisory Commission

Oregon Tradeswomen, Inc.

December 11, 2015

Mr. Sean Farrelly
Redevelopment Project Manager
City Center Development Agency of the City of Tigard
13125 SW Hall Blvd
Tigard, OR 97223

Dear Mr. Farrelly:

We are pleased to support the City Center Development Agency (CCDA) in its effort to apply for the Environmental Protection Agency (EPA) Brownfields Cleanup Grant. As you know, Oregon Tradeswomen, Inc. is a current EPA Environmental Worker Training grant recipient. We are pleased that the CCDA has committed to using their brownfields as educational showcases for our environmental students. They will prove case studies and photos of projects, discuss components of brownfield redevelopment including sampling, dirt work, underground storage tank removal, remediation techniques, etc; why brownfields remediation is important to the community and most importantly, what jobs are associated with doing this work. They will make quarterly presentations to our class with updates on their brownfield grant activities and will invite professional contacts who can speak to the more technical aspects of assessment and remediation so that our students gain exposure to and interest in the industry.

If awarded, the CCDA would also put together an RFP for environmental consultants, looking for firms who can offer job shadowing, mentorship and training opportunities, as well as other innovative ways to incorporate community participation. Oregon Tradeswomen, Inc. will work with the CCDA to provide community involvement around these issues by involving our current students and past graduates working in environmental remediation.

Over the past several years, the City and its urban renewal agency has undertaken extensive improvements in downtown Tigard. Cleanup and redevelopment of the Main Street/Fanno Creek site will open up an area of natural space to the public and will build on the ongoing work to redevelop and revitalize Tigard's walkable and transit supported downtown core. We wholeheartedly support the City Center Development Agency's efforts to remediate this brownfield site, which will support economic revitalization, improve the Fanno Creek watershed, and improve our community's health.

Sincerely,

Connie Ashbrook

Connie Ashbrook
Executive Director
connie@tradeswomen.net

Portland Community College
www.pcc.edu · 971-722-6111
P.O. Box 19000, Portland, Oregon 97280-0990
An Affirmative Action, Equal Employment Opportunity Institution

December 14, 2015

Mr. Sean Farrelly
Redevelopment Project Manager
City Center Development
Agency of the City of Tigard
13125 SW Hall Boulevard
Tigard, Oregon 97223

Dear Mr. Farrelly,

I am writing on behalf of Portland Community College to support the City Center Development Agency's Environmental Protection Agency (EPA) Cleanup Grant application. Portland Community College's Sylvania Campus, located near Tigard, is an important partner in terms of sustainability. As the campus president for PCC Sylvania, I work closely with the City of Tigard on a number of fronts. Most notably, we are currently partnering to attempt to add more sustainable transit options for PCC students and employees. In this aspect, Tigard has been a major voice for improving sustainability. In turn, we strongly support the city's improvements in downtown Tigard, particularly related to remediating the brownfield sites near Fanno Creek. PCC's Sylvania Campus is located a few miles away from downtown Tigard, and many of our students live in the surrounding communities. This project will improve the quality of life for our students and their families by improving access to quality jobs, creating healthier neighborhoods and providing a place for all residents to live, work and thrive.

If the City Center Development Agency is awarded this opportunity, we will work with them to explore internship, mentorship, and workforce development opportunities for our students who are enrolled in architectural drafting, engineering and health-related programs at our campus.

In conclusion, Portland Community College's Sylvania Campus is strongly supportive of this project and extends its full support to the City of Tigard. We are optimistic about the important results this project will yield.

Sincerely,

Lisa Avery, Ph.D.
President
Sylvania Campus
Portland Community College

Groundwork Portland

December 17, 2015

Mr. Sean Farrelly
Redevelopment Project Manager
City Center Development Agency of the City of Tigard
13125 SW Hall Blvd
Tigard, OR 97223

Dear Mr. Farrelly:

I write on behalf of Groundwork Portland to convey our support for the City Center Development Agency's Environmental Protection Agency (EPA) Cleanup Grant application. The project will revitalize the Main Street/ Fanno Creek Properties in Downtown Tigard and benefit the diverse residents of this city by increasing access to public space.

Our organization is the primary non-profit in the Portland metropolitan area focused on brownfields redevelopment and conversion of such land into greenspace, parks, community gardens, and multipurpose sites. We use a community-led process to reclaim and restore land, build awareness of environmental justice and public health issues, and create long-term civic engagement and leadership opportunities for residents, with an emphasis on communities of color, low-income residents, and youth from disadvantaged communities. Groundwork has assisted the City of Tigard in working with its Community Engagement Team on its current EPA Assessment Grant.

Groundwork Portland has extensive grassroots experience leveraging limited resources toward brownfields redevelopment. In support of Tigard's efforts, we will serve as a resource for introducing an accessible and equitable process using innovative methods to engage residents. We strongly support the City Center Development Agency's effort to clean up the Main Street/Fanno Creek Properties and improve the community's health.

Sincerely,

Edward Hill
Executive Director
Groundwork Portland

Tigard Downtown Alliance (TDA)
12345 SW Main Street
Tigard, OR 97223

December 16, 2015

Mr. Sean Farrelly
Redevelopment Project Manager
City Center Development Agency of the City of Tigard
13125 SW Hall Blvd
Tigard, OR 97223

Dear Mr. Farrelly:

I am writing on behalf of Tigard Downtown Alliance to support the City Center Development Agency's Environmental Protection Agency (EPA) Cleanup Grant application.

The TDA is a private sector partner established to assist our community in the revitalization of Downtown Tigard. Our district has many underutilized and blighted properties many of which are brownfields. One specific development opportunity is the CCDA owned Fanno Creek/Main Street property. Studies are being conducted for the potential re-use of a multi-story mixed use building that would include public space, restaurant & retail with either housing and or office space. The redevelopment of that property is the exact concept our organization believes will continue to move towards the vision our community needs and wants.

Our organization also assists the city with messaging, business to business interface as well as assisting discussions with stakeholders to enhance our district for the good of the entire population our district serves. If the cleanup project is funded, the TDA commits to working closely with the CCDA to provide community involvement around these issues. This will be done by co-hosting future workshops and information sessions about the cleanup and redevelopment of the site. We will also communicate through our e-mail newsletter the many benefits brownfield redevelopment can bring to our audience of property and business owners, the citizens of Tigard who could enjoy a revitalized district.

We enthusiastically support the City Center Development Agency's efforts to improve this brownfield site, which will support economic revitalization, improve the Fanno Creek watershed, and improve our community's health.

Thank you in advance for considering this most important funding mechanism to enhance our community.

Sincerely,

Steve DeAngelo
President
Tigard Downtown Alliance

TIGARD
CHAMBER OF COMMERCE

Tigard Chamber of Commerce
12345 SW Main Street
Tigard, OR 97223
503-639-1656

11 December 2015

Mr. Sean Farrelly
Redevelopment Project Manager
City Center Development Agency of the City of Tigard
13125 SW Hall Blvd
Tigard, OR 97223

Dear Mr. Farrelly:

I am writing on behalf of the Tigard Chamber of Commerce to support the City Center Development Agency's Environmental Protection Agency (EPA) Cleanup Grant application.

The Tigard Chamber of Commerce is focused on building a strong local economy through numerous programs and initiatives for our members and the local business community. Revitalization of our downtown core is one of the keys to growing the business economy in Tigard. A more vibrant downtown, reflects on the overall attractiveness of Tigard as both a place to build and grow business as well as live, work and play.

As we are located in Downtown Tigard we are very familiar with the issue of brownfields and the potential impact to redevelopment as well as water quality. We are invested in working side by side with many downtown business and property owners to revitalize this area and attract new business and this clean up is critical to helping with those efforts. Through our various communications mechanisms and relationships with downtown Tigard businesses, we can help carry the message of why this clean up is so important and what tools are available.

Over the past several years, the city and its urban renewal agency has undertaken extensive improvements in downtown Tigard. Cleanup and redevelopment of the Main Street/Fanno Creek site will open up an area of natural space to the public and will build on the ongoing work to redevelop and revitalize Tigard's walkable and transit supported downtown core. We wholeheartedly support the City Center Development Agency's efforts to remediate this brownfield site, which will support economic revitalization, improve the Fanno Creek watershed, and improve our community's health.

Sincerely,

Debi Mollahan
CEO, Tigard Chamber

HISPANIC METROPOLITAN CHAMBER

INVESTING IN OREGON & SW WASHINGTON

December 14, 2015

Mr. Sean Farrelly
Redevelopment Project Manager
City Center Development Agency of the City of Tigard
13125 SW Hall Blvd
Tigard, OR 97223

Dear Mr. Farrelly:

The Hispanic Metropolitan Chamber (Hispanic Chamber) **supports the City Center Development Agency's Environmental Protection Agency (EPA) Cleanup Grant application.**

The clean-up of contaminated properties is an important economic tool. The City of Tigard has already been able to do important environmental clean-up work with EPA's support.

Latinos are a growing community in Oregon and in cities such as Tigard. We are seeing an increase in the number of businesses started and the number of homes purchased in the Tigard area. The clean-up will enable more Latinos and other members of the community to access the downtown area and contribute to an active urban village. More people will be able to live, work, and play there. New housing in the downtown will provide for a range of housing types, including ownership, and affordable housing.

We wholeheartedly support the City Center Development Agency's efforts to remediate this brownfield site, which will support economic revitalization, improve the Fanno Creek watershed, and improve our community's health. We would be happy to help spread the word about the project.

Sincerely,

Gale Castillo
President

333 SW 5th Avenue, Suite 100 Portland, OR 97204 • 503.222.0280 • fax 503.243.5597
Mailing Address: P.O. Box 1837, Portland, OR 97207 • info@hmccoregon.com • www.hmccoregon.com

December 11, 2015

WEA Supports Tigard Brownfield Grant

Mr. Sean Farrelly
Redevelopment Project Manager
City Center Development Agency of the City of Tigard
13125 SW Hall Blvd
Tigard, OR 97223

Dear Mr. Farrelly:

We are writing on behalf of Westside Economic Alliance in support of the City Center Development Agency's Environmental Protection Agency (EPA) Cleanup Grant application.

Westside Economic Alliance (WEA) is a member-based, non-profit association that advocates for a healthy economic climate on the Westside of the Portland metropolitan region. It represents its members in both the public and private sectors in Washington County and the west side of Clackamas County.

Over the past several years, the city and its urban renewal agency has undertaken extensive improvements in downtown Tigard. Cleanup and redevelopment of the Main Street/Fanno Creek site will open up an area of natural space to the public and will build on the ongoing work to redevelop and revitalize Tigard's walkable and transit supported downtown core.

10220 SW Nimbus Avenue
Suite K-12
Tigard, Oregon 97223
503.968.3100 phone
503.624.0641 fax
www.westsidealliance.org

WEA
WESTSIDE ECONOMIC ALLIANCE

We wholeheartedly support the City Center Development Agency's efforts to remediate this brownfield site, which will support economic revitalization, improve the Fanno Creek watershed, and improve our community's health. If Tigard is awarded this opportunity, WEA will work with the CCDA to promote community involvement around these issues by sharing information on the process and encouraging our members to support the CCDA's efforts.

Respectfully,

Norm Eder
Board President

Pam Treece
Executive Director

10220 SW Nimbus Avenue
Suite K-12
Tigard, Oregon 97223
503.968.3100 phone
503.624.0641 fax
www.westsidealliance.org

TUALATIN RIVERKEEPERS®
11675 SW Hazelbrook Road • Tualatin, Oregon 97062
phone 503-218-2580 • fax 503-218-2583
www.tualatinriverkeepers.org

November 24, 2015

Mr. Sean Farrelly
Redevelopment Project Manager
City Center Development Agency of the City of Tigard
13125 SW Hall Blvd
Tigard, OR 97223

Dear Mr. Farrelly:

Tualatin Riverkeepers wholeheartedly endorses the Tigard City Center Development Agency's Environmental Protection Agency (EPA) Cleanup Grant application.

Tualatin Riverkeepers is dedicated to the protection and restoration of the Tualatin River System. Projects that clean up and redevelop brownfields can reduce risk to our waterways and reduce development pressure on our watershed.

Over the past several years, the city and its urban renewal agency has undertaken extensive improvements in downtown Tigard. Cleanup and redevelopment of the Main Street/Fanno Creek site will open up an area of natural space to the public and will build on the ongoing work to redevelop and revitalize Tigard's walkable and transit supported downtown core. We wholeheartedly support the City Center Development Agency's efforts to remediate this brownfield site, which will support economic revitalization, improve the Fanno Creek watershed, and improve our community's health.

Sincerely,

Brian Wegener, Riverkeeper
Advocacy & Communications Manager

COMMUNITY PARTNERS
FOR AFFORDABLE HOUSING, INC.

P.O. Box 23206 • Tigard, OR 97281-3206 • www.cpahinc.org
Tel: 503.293.4038 • Fax: 503.293.4039 • TTY/VCO: 800.735.2900

December 10, 2015

Mr. Sean Farrelly
Redevelopment Project Manager
City Center Development Agency of the City of Tigard
13125 SW Hall Blvd
Tigard, OR 97223

Dear Mr. Farrelly:

Community Partners for Affordable Housing (CPAH) is a nonprofit organization that works in the Tigard area to provide safe and healthy affordable housing to families, seniors and people with disabilities. We work hard to create green buildings and healthy environments because we know how important that is, especially for low income people who haven't always had access to healthy living environments. We are very pleased to support the City Center Development Agency's Environmental Protection Agency (EPA) Cleanup Grant application.

CPAH was fortunate to receive a Brownfields grant from the EPA several years ago to clean up a site in nearby Southwest Portland. We know how important that opportunity is and that some of the best sites may sit idle until a resource like this becomes available.

Over the past several years, the city and its urban renewal agency has undertaken extensive improvements in downtown Tigard. Cleanup and redevelopment of the Main Street/Fanno Creek site will open up an area of natural space to the public, including our residents, and will build on the ongoing work to redevelop and revitalize Tigard's walkable and transit supported downtown core. We wholeheartedly support the City Center Development Agency's efforts to remediate this brownfield site, which will support economic revitalization, improve the Fanno Creek watershed, and improve our community's health. CPAH staff will be pleased to assist the city in communicating with our residents about the project and can make meeting space available in one of our community rooms for project meetings if needed.

Sincerely,

Rachael Duke

Rachael Duke

Executive Director, Community Partners for Affordable Housing

December 15, 2015

Mr. Sean Farrelly
Redevelopment Project Manager
City Center Development Agency of the City of Tigard
13125 SW Hall Blvd
Tigard, OR 97223

Dear Mr. Farrelly:

I am writing on behalf of The Tigard Farmers Market to support the City Center Development Agency's Environmental Protection Agency (EPA) Cleanup Grant application.

Tigard Area Farmers Market is a non-profit organization working to bring farmers, community and non-profits together in a way the benefits all. We are pleased to support the City of Tigard in its effort to apply for the Environmental Protection Agency (EPA) Brownfields Assessment Grant. With more housing in the downtown we will increase patronage at the market. The Farmers Market is currently located in the downtown and the market increases the availability of healthy food options to nearby disadvantaged communities, we offer EBT and SNAP participants the ability to access fresh produce and fruit.

If Tigard is awarded this opportunity, we will work with the City to provide community involvement around these issues by allowing the city to utilize a booth at the farmers market to directly interact with the community and we would utilize social media as appropriate with updates and education from the city. The city's Downtown plans include increased public space for community events such as farmers markets.

Over the past several years, the city and its urban renewal agency has undertaken extensive improvements in downtown Tigard. Cleanup and redevelopment of the Main Street/Fanno Creek site will open up an area of natural space to the public and will build on the ongoing work to redevelop and revitalize Tigard's walkable and transit supported downtown core. We wholeheartedly support the City Center Development Agency's efforts to remediate this brownfield site, which will support economic revitalization, improve the Fanno Creek watershed, and improve our community's health.

Sincerely,

Kim Marshall
Tigard Farmers Market Manager

December 3, 2015

Mr. Sean Farrelly
Redevelopment Project Manager
City Center Development Agency for the City of Tigard
13125 SW Hall Blvd
Tigard, OR 97223

Dear Mr. Farrelly:

I am writing on behalf of Neighborhood Involvement Committee and the Derry Dell neighborhood to support the City Center Development Agency's Environmental Protection Agency (EPA) Cleanup Grant application.

As a longtime member of the Neighborhood Involvement Committee and community volunteer, I've contributed many hours to promoting connections between the city and its residents. I also volunteered for a Brownfields work group and learned about the important role these revitalized sites play in bringing together community members to revitalize land that had become (in most cases) an eyesore and unusable.

If the City Center Development Agency is successful in acquiring grant funding for a clean-up, I think the project could serve as a catalyst for getting neighbors in and around downtown involved in community planning. It would be great to create new opportunities for connecting residents with each other and the city over property that cleaned up could bring economic vitality to our neighborhoods. The Neighborhood Involvement Committee and its 13 blog site administrators would love to have a project to promote - especially one that embodies the connectivity goals of our committee and the city's vision of walkability.

I'm aware of and support the work the city's urban renewal agency has undertaken to complete extensive improvements in downtown Tigard. Clean-up and redevelopment of the Main Street/Fanno Creek site will open up an area of natural space to the public and build on the city's efforts to redevelop and revitalize Tigard's walkable and transit-friendly downtown. This is a goal the Neighborhood Involvement Committee can wholeheartedly support! We already see the effects of the improvements already completed downtown, and I'm personally delighted to see new businesses moving in and the increase in foot traffic down Main Street.

The City Center Development Agency's efforts to repair and restore this brownfield site will go a long way towards building stronger neighborhoods, supporting economic revitalization, improving the Fanno Creek watershed and improving our community's health. If ever there was a Brownfield property ready to move, this would be it. This site in particular would make an excellent, and prominent, example of the process.

Sincerely,

Jeremy Audritsh
12555 SW Pathfinder Ct
Tigard, OR 97223

Mr. Sean Farrelly
Redevelopment Project Manager
City Center Development Agency of the City of Tigard
13125 SW Hall Blvd
Tigard, OR 97223

December 14, 2015

Dear Mr. Farrelly,

I am writing on behalf of the City Center Advisory Commission (CCAC) to support the Tigard City Center Development Agency's Environmental Protection Agency (EPA) Cleanup Grant application for the Main Street/Fanno Creek site. The CCAC is an advisory citizen committee charged with advising the City Center Development Agency on policy matters related to the Urban Renewal District and implementing the City Center Urban Renewal Plan. The Urban Renewal Plan directs the city to make investments in infrastructure and support catalyst projects- projects that help make Tigard's vision for a thriving downtown a reality, which this cleanup project would advance.

Over the past several years, the city and its urban renewal agency has undertaken extensive improvements in downtown Tigard. The two main connections through downtown, Main Street and Burnham Street have been rebuilt incorporating sidewalks and vegetated stormwater planters among other streetscape improvements. Local businesses and the city have also invested in new and existing storefront improvements, including an innovative "strolling streets" program to fund improvements outside of the right-of-way.

The CCAC has long advocated for improvements to Fanno Creek and increased public access to the creek from downtown. This project is an opportunity to support redevelopment *and* enhance a unique community asset. This project also complements the Fanno Creek re-meander project planned downstream, a collaborative partnership between the city and Clean Water Services, the regional sewer utility.

The CCAC recognizes the critical role brownfield policies play in activating redevelopment and is engaged on both a policy level and project level. Not only is the CCAC represented on the city's Brownfield Initiatives Community Engagement Team, it also receives periodic project updates and provides feedback for staff and consultant consideration. Additionally, a member of the CCAC participates in meetings with the site redevelopment team.

The cleanup and redevelopment of the Main Street/Fanno Creek site will open up an area of natural space to the public and will build on the ongoing work to redevelop and revitalize Tigard's walkable, transit-supported downtown core. The CCAC supports the City Center Development Agency's efforts to remediate this brownfield site, which will support economic revitalization, improve the Fanno Creek watershed, and improve our community's health.

Sincerely,

Carine Arendes
City Center Advisory Commission Chair

LETTERS OF SUPPORT

Government Agencies

1. Washington County Department of Health & Human Services
2. Metro

WASHINGTON COUNTY
OREGON

December 10, 2015

Mr. Sean Farrelly
Redevelopment Project Manager
City Center Development Agency of the City of Tigard
13125 SW Hall Boulevard
Tigard, OR 97223

Dear Mr. Farrelly:

On behalf of Washington County Department of Health and Human Services Public Health Division, I am writing to express my support for the City Center Development Agency's Environmental Protection Agency (EPA) Cleanup Grant application.

As the local public health authority in Washington County, Oregon, we recognize the value in strengthening community capacity beyond the local health department to improve the health of all residents. The City of Tigard's commitment to the cleanup of brownfield sites is an important opportunity to incorporate healthy community design and equity into planning and redevelopment efforts. In 2014, Washington County Public Health partnered with the City to engage residents and other community stakeholders in a meaningful dialogue and process about brownfields redevelopment. This process helped identify strengths and opportunities throughout Downtown Tigard to create a healthier community for all.

The cleanup and redevelopment of the Main Street/Fanno Creek brownfield site is an important step in meeting the needs of the community. The proposed project will open up an area of natural space to the public and will build on the City's ongoing work to redevelop and revitalize Tigard's walkable and transit supported downtown core.

We support the City Center Development Agency's efforts to remediate this brownfield site, which will contribute to economic revitalization, improve the Fanno Creek watershed and improve our community's health.

Sincerely,

Tricia Mortell

Tricia Mortell, RD, MPH
Public Health Division Manager
Department of Health and Human Services

600 NE Grand Ave.
Portland, OR 97232-2736
www.oregonmetro.gov

Metro | *Making a great place*

December 10, 2015

Mr. Sean Farrelly
Redevelopment Project Manager
City Center Development Agency of the City of Tigard
13125 SW Hall Blvd
Tigard, OR 97223

Dear Mr. Farrelly:

I am writing on behalf of Metro to support the City Center Development Agency's Environmental Protection Agency (EPA) Cleanup Grant application.

Metro is the regionally-elected government for the Portland Metropolitan area, which coordinates land use and transportation planning, solid waste and recycling, regional parks and greenspaces, and distribution of federal transportation funding for 25 cities and 3 counties. Metro is also the convener of the Oregon Brownfield Coalition, a group of over 50 public, private, and non-profit entities dedicated to the goal of to finding collaborative strategies to help cleanup and revive brownfields quickly and equitably.

Downtown Tigard is currently part of a broader Metro Investment Area known as the SW Corridor. The SW Corridor Plan aims to provide a range of high capacity transit, bicycle, roadway and pedestrian improvements to communities in southwest Portland and southeast Washington County. The goal is for these improvements to alleviate congestion, increase economic vitality, and enhance the quality of life of residents in Tigard. This EPA Cleanup grant will allow the City Center Development Agency to remediate and facilitate the redevelopment of two properties in their downtown that will help bring these goals closer to reality in their community and leverage the regional transportation investments being implemented in the corridor.

Based on this background, Metro is in full support of your application to EPA for a site-specific cleanup grant. Our organization will commit to supporting your efforts by providing technical assistance during the lifecycle of the grant. Please contact me with any questions or if you wish to discuss our involvement further.

Sincerely,

Elissa Gertler,
Planning and Development Director

LETTERS OF SUPPORT

Elected Officials

1. Mayor John Cook, City of Tigard
2. Representative Suzanne Bonamici
3. Oregon State Representative Margaret Doherty
4. Oregon State Senator Ginny Burdick

Tigard City Center Development Agency

The City of Tigard's Urban Renewal Agency

CCDA

December 14, 2015

Ms. Susan Morales, Director
U.S. Environmental Protection Agency Region 10
1200 Sixth Avenue, Suite 900 (ECL-112)
Seattle, WA 98101-3140

Dear Ms. Morales,

Over the past dozen years the Tigard community has envisioned a revitalized downtown that will attract new residents, businesses and customers. Tigard residents demonstrated their support for this vision by approving the City Center Urban Renewal Plan in 2006.

The environmental contamination of many downtown properties – including the Main Street/Fanno Creek properties – has held back some of these plans. The uncertainty created by the presence of contaminants has made many property owners reluctant to consider redeveloping their property or expanding their business.

Tigard's urban renewal agency, the City Center Development Agency, recently purchased the Main Street/Fanno Creek property and plans to redevelop the site. This will open up public access to the creek and will build on the redevelopment and revitalization efforts that have taken place in Tigard's walkable and transit-supported downtown.

The city has taken the lead on several infrastructure projects to set the stage for redevelopment, but we have limited resources. An EPA Clean-up Grant would leverage the public dollars that have been committed, help the city partner with private property owners who are exploring redevelopment or business expansion, and improve public health.

Thank you for your consideration of this important community priority.

Sincerely,

John L. Cook

John L. Cook, Mayor
Chair of the Board of the City Center Development Agency

SUZANNE BONAMICI
1ST DISTRICT, OREGON

439 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
TELEPHONE: 202-225-0855
FAX: 202-225-9497

12725 SW MILLIKAN WAY, SUITE 220
BEAVERTON, OR 97005
TELEPHONE: 503-469-6010
TOLL FREE IN 1ST DISTRICT: 800-422-4003
FAX: 503-469-6018

http://Bonamici.house.gov

Congress of the United States
House of Representatives
Washington, DC 20515-3701

COMMITTEE ON EDUCATION AND THE WORKFORCE
SUBCOMMITTEES:
HIGHER EDUCATION AND WORKFORCE TRAINING
HEALTH, EMPLOYMENT, LABOR, AND PENSIONS

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
SUBCOMMITTEES:
ENVIRONMENT, *RANKING MEMBER*
SPACE

December 15, 2015

The Honorable Gina McCarthy
Administrator
Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Administrator McCarthy:

I am writing in support of the Tigard City Center Development Agency's FY 2015 Brownfields Cleanup Grant proposal for $400,000 to address contamination on the Main Street and Fanno Creek property.

Late last year, Tigard adopted a 20-year strategic plan to become "the most walkable community in the Pacific Northwest where people of all ages and abilities enjoy healthy and interconnected lives." As part of this plan, community members have been working hard to revitalize downtown Tigard. Residents will be able to access downtown by all modes of transportation, take advantage of more public open space, and benefit from the natural resources Fanno Creek has to offer.

The City Center Development Agency's proposed grant request will help Tigard with this redevelopment by providing the resources necessary to assess properties for potential environmental issues and transform a blighted section of Main Street into a revitalized development with access to Fanno Creek.

Fanno Creek and the Fanno Creek Trail run alongside the western edge of the properties. A feasibility study is underway to determine the best use of the site, which could include public space overlooking the creek and watershed educational components, a mixed use development, and innovative stormwater treatment systems. Cleanup of contaminants at the site will improve public health and increase economic development in downtown Tigard.

I urge you to give full and fair consideration to this important community development project.

Sincerely,

Suzanne Bonamici

Suzanne Bonamici,
Member of Congress

Margaret Doherty
STATE REPRESENTATIVE
DISTRICT 35

HOUSE OF REPRESENTATIVES

12/17/2015

Mr. Sean Farrelly
Redevelopment Project Manager
City Center Development Agency of the City of Tigard
13125 SW Hall Blvd
Tigard, OR 97223

Dear Mr. Farrelly,

As the State Representative for House District 35 (Tigard and Southwest Portland) in the Oregon State Legislature, I am writing to strongly support the City Center Development Agency's Environmental Protection Agency (EPA) Cleanup Grant application.

Since 2009, I have represented the people of Tigard in the Oregon House of Representatives. Prior to that, I served on the Tigard Planning Commission to advise the city on land use and transportation issues. This initiative will help further transform downtown Tigard into a thriving city center; a place where young professionals, families, and our elderly population can all gather for dining, shopping, and recreating. This will help make our community a healthier, more connected, and better place to live.

Over the past several years, the city and its urban renewal agency has undertaken extensive improvements in downtown Tigard. Cleanup and redevelopment of the Main Street/Fanno Creek site will open up an area of natural space to the public and will build on the ongoing work to redevelop and revitalize Tigard's walkable and transit supported downtown core. I wholeheartedly support the City Center Development Agency's efforts to remediate this brownfield site, which will support economic revitalization, improve the Fanno Creek watershed, and improve our community's health.

Sincerely,

Margaret Doherty

Margaret Doherty
State Representative
House District 35 (Tigard and Southwest Portland)

Office: 900 Court St NE, Salem, OR 97301 - Phone: 503-986-1414
District phone: 541-607-9207 – Email: rep.valhoyle@state.or.us

GINNY BURDICK
SENATE MAJORITY LEADER

12/15/15

Mr. Sean Farreily
Redevelopment Project Manager
City Center Development Agency of the City of Tigard
13125 SW Hall Blvd
Tigard, OR 97223

Dear Mr. Farrelly:

As the State Senator proudly representing the City of Tigard, I am writing to support the City Center Development Agency's Environmental Protection Agency (EPA) Cleanup Grant application.

Tigard is a lively, emergent city that is in the process of making extensive improvements to the downtown. The Main Street/Fanno Creek properties are located right in the heart of downtown Tigard, and the cleanup and redevelopment of the site will have a huge impact on the livability and vibrancy of the downtown area. Cleaning up this property will open up an area of natural space to the public and will build on the ongoing work to redevelop and revitalize Tigard's walkable and transit supported downtown core.

I strongly support the City Center Development Agency's efforts to remediate this brownfield site, which will support economic revitalization, improve the Fanno Creek watershed, and improve our community's health.

Sincerely,

Ginny Burdick

Ginny Burdick
Senate Majority Leader
Serving Senate District 18
(503)986-1718
sen.ginnyburdick@state.or.us

ATTACHMENT D

DEMONSTRATION OF LEVERAGING

1. CCDA Contracts with Resolve Architecture and ESA Vigil Agrimis for architecture, real estate, and natural resource study for site redevelopment plans: $111,000

2. Metro/ODOT/Federal Aid Surface Transportation/City of Tigard Main Street Green Street: $2.2 million

3. Metro/ODOT/Federal Aid Surface Transportation/City of Tigard Main Street Green Street Phase 2: $3.4 million

4. Application to Oregon Department of Transportation Connect VI Grant for Tigard Street Trail construction: $700,000

5. Metro: Grant- Downtown Tigard Urban Loft Development Project: $100,000

6. Business Oregon Brownfields Redevelopment Fund grant: $25,000 and Infrastructure Financing Programs, Brownfields Redevelopment Program, and Business Financing Programs

7. Oregon Health Authority Public Health Division Environmental Health Assessment Program resource

Contract # C160001

CITY OF TIGARD, OREGON
PROFESSIONAL SERVICES AGREEMENT
SAXONY MIXED USE/ PUBLIC SPACE DESIGN

THIS AGREEMENT, made and entered into this 1st day of July, 2015, by and between the City of Tigard, a municipal corporation, hereinafter referred to as the "City," and RESOLVE Architecture and Planning, hereinafter referred to as the "Consultant."

RECITALS

WHEREAS, the City's Fiscal Year 2015-16 budget provides for architectural and real estate consultant services for the Redevelopment Studies project; and

WHEREAS, the accomplishment of the work and services described in this Agreement is necessary and essential to the program of the City; and

WHEREAS, the City desires to engage the Consultant to render professional architectural and real estate consultant services for the project described in this Agreement, and the Consultant is willing and qualified to perform such services;

THEREFORE, in consideration of the promises and covenants contained herein, the parties hereby agree as follows:

1. Consultant's Scope of Services

The Consultant shall perform professional architectural and real estate consultant services relevant to the Project in accordance with the terms and conditions set forth herein, and as provided in Exhibit A, which is attached hereto and by this reference made a part of this Agreement.

2. Effective Date and Duration

This agreement shall become effective upon the date of execution by the City's Local Contract Review Board, and shall expire, unless otherwise terminated or extended, on completion of the work or June 30, 2017 whichever comes first. All work under this Agreement shall be completed prior to the expiration of this Agreement.

3. Consultant's Fee

A. Basic Fee

1) As compensation for Basic Services as described in Exhibit A of this Agreement, and for services required in the fulfillment of Paragraph 1, the Consultant shall be paid on an hourly rate based upon the "Schedule of Rates" in Exhibit B of this agreement, which shall constitute full and complete payment for said services and all expenditures which may be made and expenses incurred, except as otherwise expressly provided in this Agreement. The Basic Fee shall not exceed the amount of Ninety-Five Thousand and No/100 Dollars ($95,000.00) without prior written authorization.

2) The parties hereto do expressly agree that the Basic Fee is based upon the Scope of Services to be provided by the Consultant and is not necessarily related to the estimated construction cost of the Project. In the event that

Contract # C1600019

CITY OF TIGARD, OREGON
PROFESSIONAL SERVICES AGREEMENT
SAXONY FLOODPLAIN AND ENVIRONMENTAL ANALYSIS

THIS AGREEMENT, made and entered into this 29th day of September, 2015, by and between the City of Tigard, a municipal corporation, hereinafter referred to as the "City," and ESA Vigil-Agrimis, hereinafter referred to as the "Consultant."

RECITALS

WHEREAS, the City's Fiscal Year 2015-16 budget provides for professional services for the Redevelopment Studies project; and

WHEREAS, the accomplishment of the work and services described in this Agreement is necessary and essential to the program of the City; and

WHEREAS, the City desires to engage the Consultant to render professional engineer services for the project described in this Agreement, and the Consultant is willing and qualified to perform such services;

THEREFORE, in consideration of the promises and covenants contained herein, the parties hereby agree as follows:

1. **Consultant's Scope of Services**
The Consultant shall perform professional engineering services relevant to the Project in accordance with the terms and conditions set forth herein, and as provided in Exhibit A, which is attached hereto and by this reference made a part of this Agreement.

2. **Effective Date and Duration**
This agreement shall become effective upon the date of execution by the City's Local Contract Review Board, and shall expire, unless otherwise terminated or extended, on completion of the work or June 30, 2016 whichever comes first. All work under this Agreement shall be completed prior to the expiration of this Agreement.

3. **Consultant's Fee**
   A. Basic Fee
      1) As compensation for Basic Services as described in Exhibit A of this Agreement, and for services required in the fulfillment of Paragraph 1, the Consultant shall be paid on an hourly rate based upon the "Schedule of Rates" in Exhibit B of this agreement, which shall constitute full and complete payment for said services and all expenditures which may be made and expenses incurred, except as otherwise expressly provided in this Agreement. The Basic Fee shall not exceed the amount of Sixteen Thousand and No/100 Dollars ($16,000.00) without prior written authorization.
      2) The parties hereto do expressly agree that the Basic Fee is based upon the Scope of Services to be provided by the Consultant and is not necessarily related to the estimated construction cost of the Project. In the event that the actual construction cost differs from the estimated construction cost, the Consultant's compensation will not be adjusted unless the Scope of Services

LOCAL AGENCY AGREEMENT
SURFACE TRANSPORTATION PROGRAM – URBAN
SW Main Street: Rail Corridor – Scoffins Street

THIS AGREEMENT is made and entered into by and between the STATE OF OREGON, acting by and through its Department of Transportation, hereinafter referred to as "State;" and the CITY OF TIGARD, acting by and through its elected officials, hereinafter referred to as "Agency," both herein referred to individually or collectively as "Party" or "Parties."

RECITALS

1. SW Main Street is a part of the city street system under the jurisdiction and control of Agency.

2. By the authority granted in Oregon Revised Statutes (ORS) 190.110, 366.572 and 366.576, state agencies may enter into cooperative agreements with counties, cities and units of local governments for the performance of work on certain types of improvement projects with the allocation of costs on terms and conditions mutually agreeable to the contracting parties.

NOW THEREFORE, the premises being in general as stated in the foregoing Recitals, it is agreed by and between the Parties hereto as follows:

TERMS OF AGREEMENT

1. Under such authority, State and Agency agree to Agency retrofitting the northern half of Main Street, hereinafter referred to as "Project." The Project consists of widening sidewalks, the reconstruction and reconfiguration of existing streets; re-direct storm water, and new street lighting and landscaping. The location of the Project is approximately as shown on the detailed map attached hereto, marked "Exhibit A," and by this reference made a part hereof.

2. The Project will be conducted as a part of the Federal-Aid Surface Transportation Program (STP) under Title 23, United States Code. The total Project cost is estimated at $2,225,000, which is subject to change. STP urban funds for this Project will be limited to $1,234,424. The Project will be financed with STP funds at the maximum allowable federal participating amount, with Agency providing the match and any non-participating costs, including all costs in excess of the available federal funds.

3. The federal funding for this Project is contingent upon approval by the Federal Highway Administration (FHWA). Any work performed prior to acceptance by FHWA or outside the scope of work will be considered nonparticipating and paid for at Agency expense.

3

Misc. Contracts and Agreements
No. 25365

AMENDMENT NUMBER 01
LOCAL AGENCY AGREEMENT
SURFACE TRANSPORTATION PROGRAM – URBAN
SW Main Street: 99W to Rail Corridor

The **State of Oregon**, acting by and through its Department of Transportation, hereinafter referred to as "State," and the **City of Tigard**, acting by and through its elected officials, hereinafter referred to as "Agency," entered into an Agreement on August 28, 2009. Said Agreement covers retrofitting the southern half of Main Street which consists of widening sidewalks, the reconstruction and reconfiguration of existing streets, the re-directing of storm water, new street lighting and landscaping

It has now been determined by State and Agency that the Agreement referenced above shall be amended to increase funding, add contact information and add revised Attachment No. 1 Standard Provisions. Except as expressly amended below, all other terms and conditions of the Agreement are still in full force and effect.

ATTACHMENT NO. 1, STANDARD PROVISIONS, shall be deleted in its entirety and replaced with the attached REVISED ATTACHMENT NO. 1, STANDARD PROVISIONS. All references to "ATTACHMENT NO. 1, STANDARD PROVISIONS" shall hereinafter be referred to as "REVISED ATTACHMENT NO. 1, STANDARD PROVISIONS."

TERMS OF AGREEMENT, Paragraph 2, Page 1, which reads:

2. The Project shall be conducted as a part of the Federal-Aid Surface Transportation Program (STP) under Title 23, United States Code. The total Project cost is estimated at $3,040,000, which is subject to change. STP urban funds for this Project shall be limited to $2,674,929. The Project will be financed with STP funds at the maximum allowable federal participating amount, with Agency providing the match and any non-participating costs, including all costs in excess of the available federal funds.

Shall be deleted in its entirety and replaced with the following:

2. The Project shall be conducted as a part of the Federal-Aid Surface Transportation Program (STP) under Title 23, United States Code. The total Project cost is estimated at $3,465,576, which is subject to change. STP urban funds for this Project shall be limited to $3,100,505. The Project will be financed with STP funds at the maximum allowable federal participating amount, with Agency providing the match and any non-participating costs, including all costs in excess of the available federal funds.

Oregon Department of Transportation

ConnectOregon VI
Program Application 2015

Introduction

To ensure you have current program information, sign up for the ConnectOregon electronic mailing list.

- Please read the *Connect* Oregon VI *Application Instructions* prior to completing this application.
- The *Application Instructions*, *Draft Grant Agreement*, and *Frequently Asked Questions* are available on the *Connect*

Project Summary and Certification

1. Applicant

Organization name	Contact person name	
City of Tigard	Lloyd D. Purdy III	
Address	**Contact person title**	
13125 SW Hall Blvd.	Economic Development Manager	
City, state, zip	**Phone**	**Fax**
Tigard Or 97223	503.718.2442	N/A
Website address	**E-mail (Required)**	
www.tigard-or.gov	lloydp@tigard.or.gov	

2. Project name and location

Project name	Project location	Staff use only
Tigard Street Trail: A Path to Employment	Tigard Oregon	

3. Cost summary (fields will fill automatically as application is completed)

a. *Connect*Oregon VI Total Project Cost	$1,300,000.00
b. *Connect*Oregon VI Grant Request	$700,000.00
c. *Connect*Oregon VI Applicant Match (30% of grant)	$600,000.00

4. Certification

☒ By checking this box, I certify that **City of Tigard** supports the proposed project, has the legal authority to pledge matching funds, and has the legal authority to apply for *Connect*Oregon VI funds. I further certify that matching funds are available or will be available for the proposed project. I understand that all State of Oregon rules for contracting, auditing, underwriting (where applicable), and payment will apply to this project. I certify that I have read the *Sample Draft Agreement* and will sign the *Agreement* if selected.

Date: Nov 16, 2015

600 NE Grand Ave.
Portland, OR 97232-2736
www.oregonmetro.gov

Metro | *Making a great place*

November 19, 2015

Sean Farrelly
Redevelopment Project Manager
Long Range Planning
City of Tigard
13125 SW Hall Blvd
Tigard, OR 97223

Subject: Award of Community Planning and Development Grant and initiation of the Intergovernmental Agreement process

Dear Sean Farrelly,

I am pleased to inform you that on September 24, 2015, the Metro Council approved the Community Planning and Development Grant (CPDG) for your Downtown Tigard Urban Lofts Development project. The Metro Council awarded the full amount you requested, $100,000. Your staff responsible for submitting the grant application was notified immediately after the award.

Enclosed is a draft inter-governmental agreement (IGA) including a template of Exhibit A, whose purpose is to identify the milestones, deliverables and reimbursement schedule specific to your project. We would like your agency staff to draft Exhibit A to the IGA based on your grant application and the grant funding conditions. The funding conditions are also enclosed as Addendum B of Exhibit A to Metro Resolution No. 15-4640. A sample of a signed IGA is enclosed with this letter to help you draft the Exhibit A to your IGA.

Please review the enclosed "IGA Negotiation Process" and draft IGA and provide us your comments, and your attorney's comments, on the IGA. Send comments to the Metro CPDG project manager, Gerry Uba. We realize how busy you all are; however, in order to complete and sign the IGA by March 2016 deadline, we would appreciate receiving your draft by December. Upon receiving and reviewing your feedback we will develop the final IGA for our agencies' signatures. Our goal is to complete and sign the IGA by January 2016.

Roger Alfred, Deputy Metro Attorney and Gerry Uba are available to work directly with you and your agency's attorney to finalize the IGA for signatures. Roger Alfred can be reached at 503-797-1511 or Roger.Alfred@oregonmetro.gov and Gerry Uba can be reached at 503-797-1737 or Gerry.Uba@oregonmetro.gov. The Metro liaison appointed for your project can participate in the project's technical advisory committee meetings, and provide suggestions about other resources available at Metro.

I am excited about the contribution your project/s will make to the region's development. Our combined efforts will contribute to making this region a great place.

Please feel free to contact me at any time. Thank you.

Sincerely,

Elissa Gertler
Planning and Development Director

December 9, 2015

Mr. Sean Farrelly
Redevelopment Project Manager
City Center Development Agency of the City of Tigard
13125 SW Hall Boulevard
Tigard, Oregon 97223

RE: City Center Development Agency of Tigard – 2016 EPA Brownfields Cleanup Grant Proposal

Dear Mr. Farrelly:

I am writing to express my support on behalf of the Oregon Business Development Department (Business Oregon) for the Brownfields Cleanup Grant Proposal (Proposal) being submitted by the City of Tigard (City). Over the past several years, the City and City Center Development Agency (Agency) – the City's urban renewal agency - have undertaken extensive improvements to downtown Tigard. Cleanup and redevelopment of the Main Street/Fanno Creek site will open up an area of natural space to the public, and will build on the ongoing work to redevelop and revitalize Tigard's walkable and transit supported downtown core.

Business Oregon supports communities' efforts which lead to healthier and more sustainable communities since these efforts ultimately lead to the creation of jobs through the redevelopment of stigmatized properties such as brownfields. Through its Brownfields Redevelopment Program, Business Oregon provided the City with $25,000 in integrated planning grant funding to assist with the development of a coordinated brownfields redevelopment strategy beginning in the City's downtown urban renewal district. Progress on implementation of these plans is materializing as demonstrated by this Grant Proposal and through the purchase of the Main Street/Fanno Creek site by the Agency. The approximatelyly 19,000 square foot site includes 200 lineal feet of frontage on Main Street, where a recently completed $3.5 million green street project vastly improved the street's public pedestrian crossings. Fanno Creek and the Fanno Creek Trail run alongside the western edge of the property. A feasibility study is underway to determine the best use of the site – likely a combination of public space overlooking Fanno Creek, creek bank restoration, and an adjacent mixed use development.

Utilizing its Infrastructure Fiancing Programs, Brownfields Redevelopment Program, and Business Financing Programs, Business Oregon is available to assist the City and Agency as they seek to address the risks associated with these properties and to build the capacity to attract, retain, and expand businesses.

I strongly support and sincerely hope that you and your staff will approve funding for this proposal. I can be reached at (503) 986-0191 if you have any questions.

Sincerely,

Karen Homolac
Brownfields Program Specialist

PUBLIC HEALTH DIVISION
Center for Health Protection
Kate Brown, Governor

Oregon Health Authority

800 NE Oregon Street, Suite 640
Portland, OR 97232
Phone: (971) 673-0977
Fax: (971) 673-0979
TTY: (971) 673-0372

December 8, 2015

United States Environmental Protection Agency
Office of Brownfields and Land Revitalization
(MC5105-T)
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: Support for City of Tigard
EPA Brownfield Funding

To Whom It May Concern:

I am writing on behalf of the Oregon Health Authority Public Health Division (OHA-PHD) to express our support for the City of Tigard's urban renewal agency to obtain clean-up funding under the EPA's Brownfield Program. The OHA-PHD Brownfield Initiative serves as a resource for public health data, collaborates with and assists local health departments and supports community involvement in brownfield efforts statewide. Brownfield properties present unique opportunities to change the built environment in ways that address health needs, health inequities, and improve health for all.

Since 2012 we've been an active stakeholder and partner working with the City of Tigard's urban renewal agency. OHA-PHD staff present at City-led public meetings, and serve in an advisory role to inform community engagement efforts that seek to address health inequities. In 2013, OHA-PHD provided funding to Washington County Department of Health and Human Services (WCHHS) to support their role in facilitating the Agency for Toxic Substances and Disease Registry (ATSDR) Action Model. Through this effort, WCHHS fostered connections between City staff and traditionally underrepresented community members impacted by brownfield sites. The OHA-PHD Brownfield Initiative will continue to provide public health assistance and support as requested by WCHHS and the City of Tigard.

The OHA-PHD Environmental Health Assessment Program (EHAP) will serve as a resource to the City of Tigard in EPA funded clean-up activities by providing additional site-specific toxicology, health risk assessment, health education, and community engagement assistance. The OHA-PHD EHAP team is funded by the ATSDR APPLETREE cooperative agreement program to complete health consultations and public health assessments that address community concerns identified through brownfield assessment and clean-up efforts.

We encourage the EPA to fund the City of Tigard's clean-up proposal. We support the clean-up plans proposed by the City of Tigard. We align with their strategic vision to become, "the most walkable community in the Pacific Northwest where people of all ages and abilities lead healthy and interconnected lives." Please feel free to contact me with any questions regarding our support.

Respectfully,

Kari Christensen, MPH
Brownfield Initiative Coordinator
Oregon Health Authority, Public Health Division

ATTACHMENT E:

COMMUNITY NOTIFICATION DOCUMENTATION

- Copy of Public Hearing Advertisement: Tigard Times and Tigard Cityscape
- Copy of Meeting Notes and Sign-in Sheet
- Comments and Response to Comments – No written comments were received

Documentation of Community Notification

COMMUNITY NEWSPAPERS
6605 SE Lake Road, Portland, OR 97222
PO Box 22109 Portland OR 97269-2109
Phone: 503-684-0360 Fax: 503-620-3433
E-mail: legals@commnewspapers.com

AFFIDAVIT OF PUBLICATION

State of Oregon, County of Washington, SS

I, Charlotte Allsop, being the first duly sworn, depose and say that I am the Accounting Manager of *The Times* (serving Tigard, Tualatin & Sherwood), a newspaper of general circulation, published at Tigard, in the aforesaid county and state, as defined by ORS 193.010 and 193.020, that

Tigard City Center Development Agency
Notice of Public Meeting – EPA Brownfields Clean Up Grant
TT12102

A copy of which is hereto annexed, was published in the entire issue of said newspaper for
1
week in the following issue:
December 3, 2015

Charlotte Allsop

Charlotte Allsop (Accounting Manager)
Subscribed and sworn to before me this December 3, 2015.

Desirae A Marglin

NOTARY PUBLIC FOR OREGON
My commission expires March 02, 2019

Acct #10093001
Attn: Joe Patton
City of Tigard
13125 SW Hall Blvd
Tigard, OR 97223

OFFICIAL STAMP
DESIRAE ANN MARGLIN
NOTARY PUBLIC - OREGON
COMMISSION NO. 936708
MY COMMISSION EXPIRES MARCH 02, 2019

Size: 2 x 4.25"
Amount Due: $70.97*
*Please remit to address above.

CCDA

EPA BROWNFIELDS CLEAN UP GRANT PUBLIC MEETING

The City Center Development Agency of the City of Tigard is applying for a $400,000 grant from the Environmental Protection Agency (EPA) to clean up two publically owned properties located at Main Street and Fanno Creek (12533-12537 SW Main Street). A public meeting will be held **6:00- 7:00 p.m. on December 9**, in **Tigard Town Hall, at 13125 SW Hall Blvd**, for community members to review and provide comments on the draft grant proposal including the draft Analysis of Brownfield Cleanup Alternatives (which describes potential methods of cleaning up the properties). Comments can be submitted at the meeting, or e-mailed to Sean Farrelly, Redevelopment Project Manager, City Center Development Agency, Sean@tigard-or.gov

A copy of the draft grant proposal and the Analysis of Brownfield Cleanup Alternatives are available at www.tigard-or.gov/city_hall/brownfields_initiative.php . Physical copies are available at the Tigard Permit Center front desk (13125 SW Hall Blvd.) and the Tigard Public Library (13500 SW Hall Blvd.)

For more information call Sean Farrelly at 503-718-2420.
Publish 12/03/2015. TT12102

Tigard City Council
MEETING SCHEDULE

City Center Development Agency (CCDA) Meeting:
- **Tue., Dec. 1 | 6:30 p.m.**

City Council Study Session and Business Meeting:
- **Tue., Dec. 8**
  Study Session | 6:30 p.m.
  Business | 7:30 p.m.

City Council Workshop Meeting:
- **Tue., Dec. 15 | 6:30 p.m.**

Meetings are held at Tigard City Hall (13125 SW Hall Blvd.) and are open to the public. Council agendas are available at www.tigard-or.gov/council or contact Carol Krager at 503-718-2419 or carolk@tigard-or.gov

Fireside Chat *with the Mayor*

Thu., Dec. 3 | 6:30–8:30 p.m.
Symposium Coffee, 12345 SW Main St.

Last Chance: Leaf Disposal and Food Drive

Saturdays: Dec. 12 and Dec. 19 | 9 a.m. to 3 p.m.

Residents are encouraged to drop off leaves and donate non-perishable food items at the free Leaf Disposal and Food Drive. The event will be held at Cook Park, at the end of 92nd Avenue just off of Durham Road near Tigard High School.

- Leaves can be loose or bagged. While we accept plastic bags, paper bags are preferred.
- A donation of two non-perishable food items is recommended. Donations will be forwarded to Tigard's St. Vincent de Paul food distribution facility.

For more information, please contact Theresa Reynolds at theresa@tigard-or.gov or 503-718-2704.

Downtown Tree Lighting

Friday, Dec. 4 | Starts at 6:45 p.m.

Liberty Park at the corner of SW Main St. and SW Pacific Hwy. at Greenburg Rd.

Festivities include a performance by the Templeton Elementary choir, followed by remarks from Mayor John Cook. The Tualatin Valley Fire and Rescue will escort our resident Santa and Mrs. Claus to light the tree at 7 p.m.

The Tigard Downtown Alliance will feature a holiday tent with holiday treats. In addition to the alliance, supporters include downtown Tigard merchants, the City of Tigard and the Tigard Chamber of Commerce.

For more information, please visit www.exploredowntowntigard.com

Community Survey

There's still time to take the Tigard Community Survey (ends Dec. 3).

www.tigard-or.gov/survey

Visit Santa Claus

The John Tigard House hosts Santa Claus on **Saturday, Dec. 12**, from 1 to 4 p.m. The 1880 Tigard House will be decked out with Christmas trees and lights. Holiday treats and hot apple cider will be served.

The house is located on the corner of 103rd Avenue and Canterbury Lane in Tigard. Admission is free with donations cheerfully accepted. For more details, visit www.tigardhistorical.org

Public Invited to Brownfields Meeting

Wed., Dec. 9 | 6–7 p.m. | Town Hall *(13125 SW Hall Blvd.)*

The City Center Development Agency of the City of Tigard is applying for a $400,000 grant from the U.S. EPA to clean up two publically owned properties located at Main Street and Fanno Creek. Stakeholders can review and provide feedback on the draft grant proposal, including the potential methods to clean up the properties. For more information, go to www.tigard-or.gov/city_hall/brownfields_initiative.php

LIST SERV

City *of* Tigard | 13125 SW HALL BLVD., TIGARD, OR 97223 | 503-639-4171 | WWW.TIGARD-OR.GOV

City of Tigard Brownfields Initiative

Town Hall Meeting
December 9, 2015

Name (please print)	Email address
(b) (6)	

Name (please print)	Email address
(b) (6)	(b) (6)

12/9/2015

CITY CENTER DEVELOPMENT AGENCY
Main Street/Fanno Creek Site Cleanup Grant Community Meeting
Meeting Minutes
December 9, 2015

Staff Present: Sean Farrelly, Redevelopment Project Manager; Emily Leuning, Economic Development Coordinator; and Senior Administrative Specialist Joe Patton

Others Present: Councilor Marland Henderson; John Kuiper, AMEC Foster Wheeler; Richard Shavey; Linli Pao; Carine Arendes; Lynn Scroggins; Susan Pfahl; David Walsh; Joyce Casey; and Sherrie Devaney

BROWNFIELDS PRESENTATION

The meeting was convened at 6:04 p.m. Sean Farrelly and John Kuiper gave a PowerPoint presentation regarding Tigard's application for an EPA Brownfields Cleanup Grant for property on Main Street owned by the City Center Development Agency. The property consists of two tax lots.

Sean discussed the property and noted that contamination was found. He provided a breakdown of how the grant money would be spent on cleanup. He noted the conceptual building footprint may be as much as 8,000 sq. ft. and as many as five stories high.

John discussed the actual analysis of the contamination and the Analysis of the Brownfield Cleanup Alternatives (ABCA). He talked about the investigation that was done, the conceptual site model explaining how contaminants could get to a human or ecological receptor and the DEQ Prospective Purchaser Agreement and how they match up with the preferred cleanup option. The following questions were asked during the meeting.

1. **The focus of the grant is this site and it is the only site it can be used on?**

Sean stated that this is the only site the grant can be used on. He noted the previous grant received was for assessing properties citywide. This grant is only for publicly owned or non-profit owned property. Contamination in the groundwater is above DEQ cleanup levels and included PCE and TCE.

2. **When was the building built and does the contamination predate it or did it seep?**

John noted that it is not possible to date the origin of the contamination. Sean noted that aerial photos indicate the building was built in the 1930s. John noted that the contamination could be from seepage or disposal into the gravel outside, but there are no obvious drains in the building. Vapor contamination is the primary concern and he described the process to address it.

3. **Where is the sewer easement and how wide is it?**

Sean indicated on the presentation map where the easement exists currently and noted that it varies but is as wide as 15 feet.

4. **Is there a sense that the plume is staying in one spot or is there a sense that it is travelling?**

John stated that it is not in the creek. It appears to be steady and the material at the site is not very permeable. The groundwater is moving very slowly at the site.

5. **What is the half-life of the TCE and PCE?**

John stated that there is a model to determine the half-life. It incorporates many different factors and will be calculated after the actual cleanup, once all the factors are known. A new groundwater well will be dug to determine the amount of contamination remaining after cleanup. The cleanup will include a vapor barrier and a solar powered vapor mitigation system.

6. If the plume itself is stable, what about the groundwater?
The contaminants tend to adhere to small particles. There are many factors that will retard the migration of the contaminants.

7. Does the vapor mitigation system have to be an active type?
John stated that it can be a passive system, but adding a solar powered fan does not add much to the cost and will increase the effectiveness of the system.

8. Is there a way to tell if the concentration of contamination from the vapors being vented are below DEQ contamination standards?
The vapors go through a granulated, activated carbon filter and would be clean.

9. Under Alternative 2, topsoils will be removed and hauled to a Hillsboro landfill. Are they equipped to handle it?
Yes, the level of contamination anticipated can be handled by this landfill. If for some reason the contamination level exceeded what they could handle, it would be shipped to the Arlington landfill which can handle a higher level of contamination.

10. Does the level of contamination affect the Alternatives?
It would not since the method would be the same, but the total cost for cleanup would be impacted.

11. Once the cleanup is complete, will there be ongoing monitoring?
There would be four quarters of groundwater monitoring. At a minimum a stabilization of the contamination is expected, but it would likely show declining plume and would allow DEQ to issue a NFA (No Further Action) finding.

12. Since you have worked on a few of these projects, how often do you encounter something unexpected?
John stated that sometimes unexpected things are encountered, but none are expected in this case as they have a good handle on where the groundwater is headed.

13. The EPA grant is a competitive process, what can individual citizens do to support the process?
Sean noted the EPA looks for the applicant to partner with other government agencies and non-profit organizations. The CCDA is working on several of these, including the Tualatin Riverkeepers and Tigard Downtown Alliance.

Sean noted that comment sheets were available and questions or comments would be due by Friday, December 11. The meeting was adjourned at 6:52 p.m.

Joe Patton, Meeting Secretary

As of Monday, December 14, 2015, no written comment cards were received.

ATTACHMENT F

Draft Analysis of Brownfield Cleanup Alternatives

ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES

Main Street Fanno Creek Properties (aka Saxony-Pacific Properties)
12535 SW Main Street
Tigard, Oregon

Prepared for:

City Center Development Agency
c/o Jordan Ramis PC
Two Centerpoint Drive, 6th Floor
Lake Oswego, Oregon 97035

Prepared by:

Amec Foster Wheeler Environment & Infrastructure, Inc.
7376 SW Durham Road
Portland, Oregon 97224
(503) 639-3400

November 2015

Project No. 5-61M-0126803

November 20, 2015
Project No.: 5-61M-126803

City Center Development Agency
c/o Jordan Ramis PC
Two Centerpointe Drive, 6th Floor
Lake Oswego, Oregon 97035

Attention: Mr. Chris Reive

Subject: Analysis of Brownfield Cleanup Alternatives
Saxony-Pacific Properties
12535 SW Main Street
Tigard, Oregon

Dear Chris:

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) is pleased to submit this Analysis of Brownfield Cleanup Alternatives for the Saxony-Pacific property located at 12535 SW Main Street in Tigard, Oregon.

We appreciate the opportunity to serve you on this project. If you have any questions or require further information, please feel free to contact us at (503) 639-3400.

Sincerely,

Amec Foster Wheeler
Environment & Infrastructure, Inc.

DRAFT

John L. Kuiper, R.G.
Principal Geologist

DRAFT

Russ Bunker, R.G.
Sr. Associate Geologist

Attachments

CR/jm/ay

Amec Foster Wheeler Environment & Infrastructure, Inc.
7376 SW Durham Road
Portland, Oregon
USA 97224
Tel+1 (503) 639-3400
Fax+1 (503) 620-7892
www.amecfw.com

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APPENDIX

ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES

Saxony-Pacific Properties
12535 SW Main Street
Tigard, Oregon

1.0 INTRODUCTION

On behalf of the City Center Development Agency, Amec Foster Wheeler Environment, & Infrastructure, Inc. (Amec Foster Wheeler) has prepared this Analysis of Brownfield Cleanup Alternatives (ABCA) for the Saxony-Pacific Properties located at 12535 SW Main Street, Tigard, Oregon (Site). The Site is identified on the Oregon Department of Environmental Quality (DEQ) Brownfields database. A prospective purchaser agreement (PPA) between the City Center Development Agency and DEQ, stipulates cleanup requirements for the Site (DEQ, 2015).

The objective of this ABCA is to present cleanup remedy alternatives for the Site and guide selection of a remedy based on a systematic evaluation of the alternatives. Each alternative is evaluated using the following factors: 1) effectiveness, 2) long-term reliability, 3) implementability, 4) implementation risk, and 5) reasonableness of cost. This ABCA was completed in general accordance with US Environmental Protection Agency (EPA) guidelines for conducting removal actions (Code of Federal Regulations [CFR] 40, Part 300, Subpart E] and DEQ authority (Oregon Administrative Rules [OAR] 340-122). This document is a draft, and is presented for public comment.

1.1 SITE LOCATION AND DESCRIPTION

The Site is located at 12535 SW Main Street in downtown Tigard, Oregon, and is comprised of Tax Lots 2000 and 2100 of Section 02, Township 2 South, Range 1 West on Washington County Tax Assessment Map 2S102AB. The Site location is shown on **Figure 1**. The Site is developed with three wood-frame commercial buildings with adjoining walls. The westernmost building was constructed partially over Fanno Creek, such that the flow of Fanno Creek is directly beneath the western part of the building. This westernmost building is dilapidated and vacant. Current Site tenants are a drivetrain repair shop, Hiller's Emblem Shop (screen printing and embroidery), and a nail salon.

The Site is situated on approximately 0.44 acres within the downtown historical commercial area of Tigard. The Site is bordered on the southeast by SW Main Street, on the northeast by two commercial properties (12519 and 12525 SW Main Street), on the northwest by a vegetated

embankment sloping down from Highway 99 W, and on the southwest by Fanno Creek. The Site and the adjoining properties to the east are shown in **Figure 2**.

1.2 SITE BACKGROUND

Historical and current uses of the Site have included multiple tenants that used and stored petroleum products. Examples include a former sawmill, tire shop, and an Automotive Drivetrain repair shop. The western-most portion of the adjoined buildings is vacant, with the eastern-most portion, 12525 SW Main Street, formerly occupied by a welding shop, a printing shop, and a sealant shop (formerly Perma Treat). An active dry-cleaning business known as Tigard Cleaners, is located further to the east of the Site at 12519 SW Main Street. Kiss Carwash is located 300 feet east of the Site and was a former retail fuel station. Free-phase petroleum product has been identified at Kiss Carwash.

During the 1950s, the Site was occupied by the Tigard Planing Mill. It is assumed that small quantities of petroleum products and degreasing solvents may have been stored and used on-site for the operation of equipment. The eastern end of the Site currently is occupied by Automotive Drivetrain and was recently occupied by a tire shop.

Historical Sanborn fire insurance maps indicate that in 1950, the building located to the east of the Site at 12525 SW Main Street was occupied by a welding shop and a printing shop. Materials that could have been used in the welding shop include degreasing solvents and welding components containing metals, such as mercury and lead. Materials that could have been used in the printing shop include cleaning or degreasing solvents and kerosene for the cleaning plates, rollers, and other printing equipment.

Tigard Cleaners is located at 12519 SW Main Street, approximately 200 feet east and up slope (presumably up gradient) of the Site. A second dry cleaners, Tigard Main Street Cleaners, is located at 12155 SW Main Street, approximately 0.2 miles northeast of the Site. Both facilities are listed on the RCRA-Conditionally Exempt Small Quantity Generators (CESQGs) and Drycleaners databases. Although there are no known violations or releases currently associated with either facility, given the highly mobile properties of commonly used dry-cleaning solvents such as tetrachloroethylene (PCE), there is potential that an undocumented release from these facilities could have affected groundwater quality beneath the Site.

A former retail fuel station known as Tigard Shell or Tigard Area Station was located at 12475 SW Main Street, approximately 300 feet east of the Site in an inferred up gradient location. This location is now occupied by Kiss Carwash. Tigard Area Station (leaking underground storage tank

[LUST] #34-88-0081) and Tigard Shell (LUST #34-02-1149), are listed by DEQ as having cleanup completion dates of October 19, 1989 and November 30, 2006, respectively. Gasoline-contaminated soil and groundwater were discovered during underground storage tank (UST) decommissioning in 1989 and 2002. Free-product recovery occurred in 2003 and a site assessment occurred in 2005. The Tigard Shell was granted a "No Further Action" (NFA) determination by the DEQ in 2007. The DEQ's NFA letter describes that the western extent of groundwater contamination was not delineated and that concentrations of gasoline-range and oil-range hydrocarbons in soil and groundwater exceed applicable risk-based concentrations (RBCs).

1.3 ASSESSMENT CHRONOLOGY

In October 2012, AMEC Earth and Environmental (now Amec Foster Wheeler) completed a Phase I Environmental Site Assessment (ESA) of the Site. Based on the results of the Phase I ESA, several phases of Phase II subsurface investigations were conducted from November 2012 through August 2014, culminating in the submittal of a Site Characterization Report in September 2014 (AMEC, 2014). These investigations included soil, sediment, surface water, groundwater, and soil gas sampling at the Site to evaluate whether historical use of the Site and properties up gradient of the Site have affected Site environmental conditions. The assessments are listed below.

- **Phase I Environmental Site Assessment:** Saxony-Pacific Properties, 12535 SW Main Street, Tigard, Oregon dated October 19, 2012 (AMEC, 2012a);
- **Phase II Subsurface Investigation:** Saxony-Pacific Properties, 12535 SW Main Street, Tigard, Oregon dated November 26, 2012 (AMEC, 2012b);
- **Phase II Subsurface Investigation:** Saxony-Pacific Properties, 12535 SW Main Street, Tigard, Oregon dated May 30, 2013 (AMEC, 2013); and
- **Site Characterization Report:** Saxony-Pacific Properties, 12535 SW Main Street, Tigard, Oregon, dated September 26, 2014 (AMEC, 2014).
- **Phase I Environmental Site Assessment:** Saxony-Pacific Properties, 12535 SW Main Street, Tigard, Oregon dated November, 2015 (Amec Foster Wheeler, 2015)

Results of these investigations are presented in Section 4.0.

2.0 CONCEPTUAL SITE MODEL

A conceptual site model (CSM) defines the potentially complete exposure pathways by which human or ecological receptors could be exposed to Site contaminants under current or future land uses. A CSM diagram is presented as **Figure 3**. The CSM is used to select appropriate screening

criteria for assessing potential risk to human health and the environment. Information on current zoning and land use, and assumptions about potential future land uses made for the purposes of developing the CSM, are described in Sections 2.1 and 2.2. Screening levels selected to evaluate potential risk from Site conditions are discussed in Section 2.3.

2.1 LAND USE AND ZONING

The Site currently is zoned as Mixed-Use, Central Business District (MU-CBD). The Site's zoning designation is not expected to change, and it allows for commercial and urban residential development. The MU-CBD zoning district is designed to provide a pedestrian-friendly urban village in downtown Tigard. A wide variety of commercial, civic, employment, mixed-use, multifamily and attached single-family residences are permitted.

2.2 BENEFICIAL WATER USE DETERMINATION

A beneficial water use determination (BWUD) for the Site was developed as part of the September 2014 Site Characterization, the methodology and results of which are included in the 2014 Site Characterization report (AMEC, 2014).

Amec Foster Wheeler defined the Locality of Facility (LOF) using the Oregon Administrative Rule 340-122-115[34]), which defines an LOF as the area where a human or ecological receptor contacts or is reasonably likely to contact facility-related hazardous substances. For the Site, the LOF is the area encompassed by soil and groundwater impacts and the adjoining Fanno Creek to the west of the Site. This area is laterally delineated by Highway 99 W to the northwest, commercial development to the northeast, SW Main Street and commercial development to the east, southeast, and south, and the west bank of Fanno Creek to the west. Vertically the LOF is limited to the shallow water-bearing zone.

To determine whether there is a reasonably likely future beneficial use of water, Amec Foster Wheeler reviewed existing land use in the LOF and in the vicinity of the LOF, as well as current and historical water uses within the vicinity of the LOF. Amec Foster Wheeler searched online water well logs from the Oregon Water Resources Department (OWRD) as well as online water rights from the Oregon Watermaster. Amec Foster Wheeler also reviewed trends for groundwater and surface water use to determine what reasonably likely future beneficial uses exist for groundwater in the LOF and for surface water (Fanno Creek).

The findings of the BWUD indicate that for groundwater there are no reasonably likely future beneficial water uses related to residential use, because the entire area within a 0.5 mile radius of

the Site is connected to Tigard's municipal water supply. Although there is potential for beneficial use of groundwater from industrial or irrigation use, historical water well logs identified within 0.5 mile of the Site were identified as domestic and not industrial or irrigation.

For surface water, reasonably likely future uses would be related to irrigation, aquatic habitat, and aesthetics. Water rights were identified along Fanno Creek at both upstream and downstream locations relative to the Site. It is likely that several of these water rights are no longer used and have not been relinquished to the State. However, some of these water rights are still in use, the nearest anticipated to be the one associated with the Tigard Christian Church located at 13405 SW Hall Boulevard.

2.3 SCREENING-LEVEL HUMAN HEALTH RISK ASSESSMENT

Amec Foster Wheeler completed a screening-level Human Health Risk Assessment (HHRA) to establish appropriate human health RBCs for contaminants of concern (COCs) and evaluate if current site conditions meet them. RBCs for the Site were selected using DEQ guidance (DEQ, 2012). COCs at the Site are: halogenated volatile organic compounds (HVOCs), total petroleum hydrocarbons (TOH), metals, polynuclear aromatic hydrocarbons (PAHs), and polychlorinated biphynals (PCBs). The results of the HHRA were presented in the September 2014 Site Characterization report (AMEC, 2014).

2.4 RECEPTORS

Four types of human health receptors were considered for this Site: urban residential, occupational workers, construction workers, and excavation workers. Information about the current and reasonably likely future use of the Site was used to identify which receptors were likely to be exposed to soils and groundwater. The Site is located in Tigard's downtown urban area and is occupied by an active commercial business. The Site is within the city's MU-CBD zoning area indicating a possibility that future redevelopment in the area could allow for mixed-use development such as lower-level commercial with upper-level residential.

2.4.1 Exposure Routes

Two types of exposure routes generally are considered in the risk assessment process: Direct exposure routes and indirect exposure routes. A direct exposure route is complete when a receptor comes into direct contact with the impacted medium (e.g., dermal contact). An indirect exposure occurs when the chemical is transferred from the originally impacted medium to another and subsequently to a human receptor (e.g., volatilization of contaminants from groundwater into indoor air and subsequent inhalation).

The groundwater-to-tap water pathway is considered to be an incomplete pathway for this Site due to the low permeability of the shallow water table aquifer, the generally high turbidity of shallow groundwater, and the presence of a long-established municipal water supply.

For direct exposure at the Site, there is the potential for dermal contact by excavation workers to contaminants in soil and groundwater in excavated areas and trenches. There also is the potential for dermal contact by future residents, occupational workers, and construction workers to contaminants in sediments along Fanno Creek. It is not anticipated that the residents or workers will have direct contact with the groundwater via the tap water pathway because it is not used as drinking water.

Indirect exposure to HVOCs in soil and groundwater would be by inhalation of HVOCs migrating from subsurface media into a building or to outdoor air. This exposure route is not present for TPH (oil), PAHs, metals, and PCBs in sediments because these COCs are not volatile. The indirect exposure route for HVOC constituents is a potentially complete exposure route for future residents, occupational workers, construction workers, and excavation workers.

The HHRA CSM for the Site is shown as **Figure 4**. This HHRA CSM evaluates each complete exposure pathway.

2.5 SCREENING-LEVEL ECOLOGICAL RISK ASSESSMENT

Amec Foster Wheeler completed a screening-level ecological risk assessment (ERA) using Level II screening level values (SLVs) to evaluate if current site conditions and detected constituents meet those SLVs. These Level II SLVs for bioaccumulation (human and fish) are based on DEQ guidance (DEQ, 2007; DEQ, 2014a, DEQ, 2014b).

For ecological risk exposure at the Site, there is the potential for direct contact by organisms to contaminants in sediments; and there is a potential for human and bird/mammal consumption of fish and other organisms in this environment. Two federally-protected species occur near the project: Upper Willamette River (UWR) steelhead distinct population segment (DPS), and the UWR spring-run Chinook salmon evolutionarily significant unit (ESU). Fanno Creek was not designated critical habitat for UWR steelhead or UWR Chinook salmon.

As described in the Site Characterization report (AMEC, 2014), concentrations of metals, PAHs, and PCBs in sediments are greater than the Level II SLVs for bioaccumulation in humans from

consumption of fish or other organisms in Fanno Creek. Concentrations of selected metals and PAHs are also greater than Level II SLVs for freshwater fish (DEQ, 2007, DEQ, 2014a; DEQ, 2014b).

3.0 ASSESSMENT SUMMARY

3.1 GEOLOGY AND HYDROGEOLOGY

The Site is located within the Tualatin Valley, which consists of broad valley plains, ranging in altitude from 100 to 300 feet. The bedrock of the basin is the Columbia River Basalt (CRB) that has been deformed into a saucer-shaped syncline almost bisected lengthwise by a ridge. The bedrock basin has been partly filled by alluvium, which underlies the valley plains. Groundwater occurs in the CRB and in fine sands and silts in the upper part of the alluvial fill. The groundwater occurs under unconfined, confined, and perched conditions.

The unconsolidated alluvial deposits in the Site vicinity are considered moderately permeable and generally yield low to high quantities of water to wells. Regional groundwater migration is strongly influenced by surface drainage, topography, and the permeability of subsurface materials. Depths to water and flow directions also are expected to be seasonally variable in the Site vicinity. Based on our review of topographic maps, the Site is located at approximately 154 feet above mean sea level (msl). The Site slopes to the southwest and groundwater is anticipated to flow locally towards Fanno Creek and regionally to the southeast, in the direction of Fanno Creek flow. Fanno Creek is located near the western edge of the Site and flows beneath the part of the building located at the western edge of the Site. The Site boundary extends to the middle of Fanno Creek. In the upland portion of the Site, groundwater was encountered at depths of approximately 6 to 19 feet below ground surface (bgs) during AMEC's drilling investigations in 2012 and 2013 (AMEC, 2014).

3.2 SITE SOIL

The US Department of Agriculture Soil Survey of Washington County, Oregon, identifies Site and vicinity native soils as Aloha silt loam. The Aloha series is described as somewhat poorly drained with slow infiltration rates. Aloha silt loam formed in alluvium or lacustrine silt on broad valley terraces (AMEC, 2012a).

For the purposes of this report, "fill" is used as a generic term for imported soil, scrap materials, or reworked native soil placed at the Site during or after initial development in the early 1900s. The thickness of fill material across the Site and along Main Street ranges from 5 to at least 18 feet, and possibly to 22.5 feet, in the locations tested. The fill is generally thicker in the central and southwest portion of the Site (towards Fanno Creek). The fill consists of silt, clay, and fine sand,

with local basalt boulders. The native soil extends to at least 25 feet bgs, the maximum depth explored at the Site (AMEC, 2013).

3.3 SURFACE WATER HYDROLOGY

Surface water in the vicinity of the Site empties into the Fanno Creek Drainage system. The Fanno Creek Drainage can be characterized as an industrial waterway as it traverses the metro area. The creek receives water from many storm water run-off points. Flow can be highly variable in response to storm events and flow generally is high in the winter (rainy) season and low in the summer (dry) season.

Stormwater flow across the Site generally is directed down slope, towards Fanno Creek. The City of Tigard provided Amec Foster Wheeler with detailed Lidar-based topography that was used to map anticipated surface flow across the Site, adjoining properties, and Fanno Creek. As shown on **Figure 5**, surface flow is directed towards Fanno Creek from the south and north sides of Highway 99 W. The figure shows shallow drainage patterns around the elevated roadway and into Fanno Creek on the north side of the Site. Drainage patterns also are shown around the southern side of the building, between the Site and SW Main Street.

Two drainage outfalls are located to the north of the Site and both drainage outfalls are constructed of 16-inch-diameter corrugated metal. Neither outfall was identified on City of Tigard stormwater maps; therefore, it is likely that these outfalls are associated with drainage from Highway 99 W and are owned and mapped by Oregon Department of Transportation.

Five drainage outfalls are located beneath the SW Main Street Bridge, adjoining the southern property boundary. Three of the outfalls are located above the west bank of Fanno Creek and two outfalls are co-located above the east bank of Fanno Creek. Only two outfalls are actively used to direct surface water runoff. City of Tigard personnel confirmed that the remaining outfalls have been capped by the City.

4.0 NATURE AND EXTENT OF CONTAMINATION

The discussion of the nature and extent of contamination presented in this report is based on field observations and analytical data developed by the subsurface investigations and Site characterization field work described in Section 1.3. The results of the site characterization activities are included in selected tables which are presented in **Appendix A**. The results of the characterization activities demonstrate that groundwater and sediment impact at the Site is associated with past releases of contaminants, some of which clearly did not originate on the Site.

These releases are believed to have occurred over several decades, with most occurring before 1980. Specifically, COCs are categorized as follows:

- HVOCs have been detected in groundwater on the upland portion of the Site. The primary HVOC contaminants are PCE, trichloroethylene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride (VC); and
- TPH, PAHs, metals, and PCBs have been detected in sediment along Fanno Creek.

The discussion of the extent of contamination in Site media is presented in Sections 4.1 through 4.4. *[Note: Based on the Site Characterization Report, DEQ stated in an email dated October 2, 2014: "We concur with your conclusion that the site does not appear to be a significant contributor to existing sediment contamination in Fanno Creek". In the same email DEQ goes on to state their expectation that the HVOC impacts on the upland portion of the site will require some form of action (DEQ, 2014c)].*

4.1 SOIL

Chemical analysis of soil samples collected from four locations on the upland part of the Site did not detect TPH or HVOCs at concentrations greater than laboratory method reporting limits. The presence of localized pockets of contaminated soil at the Site beneath the building is, however, suspected because the distribution of HVOCs in groundwater indicates a nearby source located along the northeastern portion of the building. No source soil material has been identified in accessible areas where soil samples could be obtained. Soil sampling could not be performed beneath the building due to the thickness of the floor slab (nearly one foot with an apparent secondary slab beneath). Refusal was also encountered (concrete) at a location attempted behind (northwest of) the building.

4.2 SOIL GAS

Low concentrations of HVOCs were detected in soil gas at the Site; however, no HVOC concentrations exceeded DEQ Urban Residential RBCs. The absence of significant HVOCs detected in the soil gas is evidence that vapor phase contamination is not of significant concern in the areas explored beneath the Site. However, the possibility of higher concentrations of soil gas near source soils (should they be identified in the future) cannot be ruled out.

4.3 SEDIMENT

The COCs for sediments along Fanno Creek are TPH, PAHs, metals, and PCBs. The greatest concentrations of these COCs were located on the west bank of Fanno Creek, opposite the Site.

Concentrations of these COCs appear to increase with depth, with the greatest concentrations of benzo(b+k)fluoranthene and dibenz(a,h)anthracene found in the deepest sediment sample collected (24 to 36 inches in depth).

Differing energy environments within Fanno Creek need to be considered when interpreting COC concentrations in the sediments. Those sections of the creek immediately upstream (Highway 99W bridge) and downstream (Main Street bridge) are relatively high energy environments compared to the stretch of creek adjacent along the Site, which is characterized by low energy flow and sediment accumulation. Because of this, sediments deposited along the bank of the Site are more fine-grained than those upstream or downstream. Fine-grained sediments tend to more readily bind COCs than coarser-grained sediments (due to greater surface area available for binding). Therefore, higher concentrations of COCs will be detected in lower energy environments. Changes in COC concentrations up and down this stretch of Fanno Creek likely are more related to the localized stream energy flow regime and associated depositional environment, than proximity to upland source material.

Considering the aforementioned variables in environment and laboratory dilutions, it does appear that a main source of contaminants of potential concern (COPCs) in sediment is from Highway 99 W. Southwest Main Street also may be a potential contributor. Because COPCs also were detected upstream of Highway 99 W, additional sources must exist further upstream of the Site and Highway 99 W.

Two COPCs were detected in sediment on the far west side of Fanno Creek. The presence of these COPCs (acenaphthylene and selenium) demonstrates that some concentrations of PAHs and metals in the area of Fanno Creek bordering the Site originate from the opposing drainage. The highest detected concentrations of the majority of the metals tested were found in the sediment sample collected on the west side of Fanno Creek. The elevated concentrations of lead, copper, cadmium, chromium, silver, and nickel demonstrate significant contribution originating from the opposing drainage.

4.4 GROUNDWATER

The COCs identified in groundwater are PCE, trichloroethene (TCE), dichloroethene (cis-1,2-DCE), and vinyl chloride (VC). The highest concentrations of these HVOCs detected are centered beneath the building canopy on the upland part of the Site, in an area that straddles both tax lots that comprise the Stie. HVOCs in site groundwater do not reach Fanno Creek.

Based on the lack of HVOC detections beneath Main Street southeast of the Site, the western boundary of the Site near Highway 99 W, and southwestern boundary of the site adjacent to Fanno Creek, it appears that HVOC impacts are confined to the northeastern and up-gradient half of the Site. A contour map depicting total HVOC concentrations is presented as **Figure 6.**

The lateral extent of HVOC contamination beneath the Site is defined in the cross-gradient and down-gradient directions. Delineation in the up-gradient direction is not complete because there are detections near the up-gradient property boundary. Some portion of HVOC constituents in this area may originate from an unidentified source located up-gradient and off-Site. Delineation in the vertical direction also is undefined. However, multiple lines of evidence suggest that significant vertical migration is not occurring: a) HVOC concentrations are relatively low in shallow groundwater indicating no evidence for dense non-aqueous-phase liquid (DNAPL); b) the low-permeability soil matrix of clay and silt slows groundwater and contaminant migration, and c) the elevation of the adjacent Fanno Creek is similar to the groundwater elevation as measure in borings drilled on the upland part of the Site.

5.0 ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES

The purpose of this ABCA is to define and evaluate cleanup alternatives that decrease contaminant concentrations to levels that are protective of human health and the environment. This ABCA contains the following elements:

1. Remedial action area.
2. Evaluation of proposed cleanup alternatives.
3. Presentation of the recommended alternative.
4. Discussion of the residual risks associated with the recommended alternative.

5.1 REMEDIAL ACTION AREA AND OBJECTIVES

Based on discussions with DEQ, the remedial action area and objectives are listed below.

The remedial action area consists of:

- Groundwater with HVOCs in the upland portion of the site (Figure 6), and
- Soil with HVOCs (source area soils) in the upland portion of the site.

The remedial action objectives are:

- Prevent direct contact between human receptors and soil exceeding applicable risk-based concentrations;
- Prevent direct contact between human receptors and groundwater exceeding applicable risk-based concentrations;
- Remediate/remove source-area soils to the extent feasible (especially if “hot spots” are encountered following building demolition);
- Prevent HVOC vapors from migrating into indoor air (eliminate the vapor migration pathway); and
- Utilize sustainable (“green”) remediation/removal strategies to the maximum extent practicable.

5.2 DEFINITION AND EVALUATION OF REMEDIAL ALTERNATIVES

The remedial alternatives are defined and discussed below. A quantitative comparison of the remedial alternatives is provided in **Table 1**.

Under DEQ removal authority (OAR 340-122-0040) and EPA guidance (EPA, 2014; EPA, 2015), remedial alternatives are evaluated using the following criteria:

- Effectiveness,
- Long-term Reliability,
- Implementability,
- Implementation Risk,
- Sustainability,
- Reasonableness of Cost, and
- Susceptibility to Climate Change.

5.2.1 Proposed Remedial Alternatives

The objective of each alternative is to mitigate risk from chemical concentrations present at the Site, such that any potential exposures do not exceed levels protective of human health and the environment. Because of the structures present at the Site, the nature of the contaminants, their persistence in the environment, and the media in which the contaminants occur, only a few

remedial alternatives warrant detailed evaluation. For this reason, the following remedial alternatives are evaluated for soil and groundwater in this ABCA:

The general response actions are:

- No action
- Vapor mitigation (engineering controls), source removal ("hot spot" soil only), institutional controls, and monitored natural attenuation (MNA)
- Source removal (both soil and groundwater), institutional controls, and MNA

Alternative 1: No Action

Alternative 1, no action (e.g. leaving the Site in its current state), is the baseline against which all other alternatives will be measured.

Alternative 2: Vapor mitigation (engineering controls), source removal ("hot spot" soil only), institutional controls, and monitored natural attenuation (MNA)

Alternative 2 is based upon DEQ requirements identified in the PPA (DEQ, 2015). As required by DEQ in the PPA, engineering controls would be installed at the Site. These engineering controls would consist of a vapor mitigation system comprised of a network of perforated pipes in trenches, covered with gravel, and overlain by a heavy duty vapor barrier. The system would be passive in nature, allowing accumulated vapors to vent to outdoor air. The passive venting system would be enhanced through the use of a solar-powered low power fan to maintain a minimal negative pressure gradient in the system. Because a passive venting system is dependent upon the difference between the in-ground air pressure and the barometric pressure outside, the pressure gradient in the system can fluctuate from positive (air moving into the ground backwards through the system) to negative (air moving out of the ground as the system intends). By installing a low pressure fan, which only requires minimal power, the system can maintain a negative pressure gradient while the fan is operational. The fans typically use less than 300 watts and can easily be tailored for solar powering. Solar power also alleviates the work and costs associated with power connections and infrastructure.

Groundwater will be monitored (MNA) to provide a higher degree of confidence as to whether or not an exceedance of RBCs is significant over the longer term and constitutes a continuing risk. Alternative 2 will consist of installing a three or four groundwater monitoring wells within the area of the highest detected concentrations of VOCs (northeastern portion of Site) and sampling for HVOC and natural attenuation parameters for up to four quarterly sampling events.

Institutional controls would consist of the same Easement and Equitable Servitude (EES) that exists for the Site. This would enforce the maintenance of engineering controls and prevent use of groundwater. Prior to building demolition, a contaminated media management plan (CMMP) would be prepared for use by contractors. After building demolition source area “hot spot” soils would be removed and disposed of at an appropriate landfill. Building demolition would need to occur prior to soil removal (to access the soils). Following soil removal, confirmatory soil, soil gas, and groundwater sampling would be performed.

Alternative 3: Source removal (both soil and groundwater), institutional controls, and MNA

Alternative 3 is a more aggressive and comprehensive approach than Alternative 2, whereby most of the accessible impacted media would be removed or remediated in place. The building and slab would be removed (under guidance of a CMMP) to allow access to impacted soils. Impacted soils would be removed to the maximum extent practicable, and disposed of at an appropriate landfill. This would entail excavation to the water table and likely require shoring. An in-situ air sparging system would be installed, along with a corresponding soil vapor extraction (SVE) system, to remediate HVOCs in groundwater. Following soil removal and groundwater treatment, confirmatory soil and groundwater sampling would be performed. Groundwater sampling would include installation of three to four groundwater monitoring wells, which would be sampled for up to four quarters as part of an MNA program. Institutional controls would be in the form of an EES that would prevent use of site groundwater.

5.2.2 Sustainability Considerations

Sustainability has been considered in the design and selection of a cleanup plan for the Site:

- The passive vapor mitigation system will be enhanced via a solar-powered fan.
- Trucking contractors hired to transport contaminated soil from the Site will be encouraged to use diesel fuel blended with 10% biofuel, particularly if transport distances are large.
- The on-site separation of recyclable/reusable materials (concrete, gravel, etc.) from the soil stockpiles was considered as an alternative to transport of all stockpiled material to a landfill. However, this option was not retained in final cleanup plans due to the associated noise impacts and dust generation, as well as the cost and complexity of staging the necessary equipment in a small area.

5.2.3 Changing Climate Concerns

Changing climate concerns have been considered in the design and selection of a cleanup plan for the Site (EPA, 2014; EPA 2015). Considerations are based on predications of long-term changes to Pacific Northwest climate which include: increase in average temperature of up to 5 degrees

Fahrenheit by the 2080s, reduced winter snow pack, rising sea level (several inches to a few feet by end of century), and the possibility of enhanced seasonal precipitation cycle (wetter autumn/winter and drier summer), and more intense rainfall events (CIG, 2009).

5.2.4 Major Assumptions

The major assumptions listed below apply to the alternatives:

- The cost estimates presented in this ABCA are engineering cost estimates with a precision of +50%/-30%.
- The extent of the contamination, and thus the basis of the preliminary cost estimate, is defined in the Site Characterization Report (AMEC, 2014).
- Costs assume that the excavated soils, including "hot spot" soils can be disposed as non-hazardous waste.
- All costs are presented as 2015 dollars, with no discounting.
- Complete groundwater plume delineation upgradient and off site will not be required. The City will not be responsible for contaminants originating upgradient and off site (DEQ, 2004).

5.3 CLEANUP ALTERNATIVES (ALTERNATIVES 1, 2, 3)

5.3.1 Alternative 1: No Action

Alternative 1 is the baseline against which all other soil actions are compared.

Under this alternative, soil and groundwater that exceeds RBCs protective of potential future residents and occupational Site users will be left in place.

Effectiveness: Alternative 1 does not eliminate the potential for Site users to come into direct contact with contaminated soil or groundwater, nor does it protect Site users from exposure to soil gas (vapors) migrating to indoor air.

Long-term Reliability: Alternative 1 does not remove contamination or eliminate human or ecological exposure pathways, and therefore is unreliable in the long-term.

Implementability: Alternative 1 is considered easy to implement as it requires no action.

Implementation Risk: Alternative 1 implementation risk is low, because no activities are conducted.

Sustainability: Alternative 1 is not sustainable in that contaminated groundwater (and likely soils) have continued potential to produce vapors that could enter indoor air.

Climate Change Concerns: No Site-specific risk factors have been identified for the Site or for this alternative with respect to potential climate change.

Cost: The cost estimate to implement this alternative is approximately $10,000.

5.3.2 Alternative 2: Vapor mitigation (engineering controls), source removal ("hot spot" soil only), institutional controls, and monitored natural attenuation (MNA)

Under Alternative 2, the requirements of the PPA would be met. Although soil and groundwater that exceeds RBCs protective of potential future residents and occupational Site users will be left in place, hot spot soils would be removed resulting in a reduction in contaminant mass.

Engineering and institutional controls would be used to mitigate residual risk on the Site. Engineering controls would include installation of a solar-powered vapor mitigation system. Institutional controls in the form of an EES, or deed restriction, would be recorded with the Site deed. The EES would document the following requirements:

- Groundwater at the Site will not be extracted for drinking water, industrial use, or other purposes.
- A CMMP will be developed that will outline the location, and proper handling and disposal of soil and groundwater during construction activities at the Site.

Effectiveness: Alternative 2 is effective because engineering controls eliminate the indoor air pathway, and institutional controls reduce the potential for Site users to come into direct contact with contaminated soil or groundwater.

Long-term Reliability: Alternative 2 removes the most-impacted source soils and includes institutional controls which will enforce the maintenance of the vapor mitigation system and prevent use of Site groundwater. Implementation of an MNA program will provide added confidence in residual contaminant concentrations and potential contaminant flux. Therefore Alternative 2 is reliable in the long-term.

Implementability: Alternative 2 is considered relatively easy to implement because it utilizes available contractors and materials.

Implementation Risk: Alternative 2 implementation risk is low. Subcontractors hired to conduct the soil removal will be current with US Occupational Safety and Health Administration (OSHA)

40-Hour Hazardous Waste Operator (HAZWOPER) training. Work would be performed under a site-specific Health and Safety Plan (HASP).

Sustainability: Alternative 2 is sustainable, particularly with addition of a solar-powered enhancement to the vapor mitigation system.

Climate Change Concerns: Similar to Alternative 1, no Site -specific risk factors have been identified for the Site or this alternative.

Cost: The cost estimate to implement this alternative is $400,000 to $475,000.

5.3.3 Alternative 3: Source removal (both soil and groundwater), institutional controls, and MNA

Alternative 3 removes the majority of the impacted soil at the Site. In addition, impacted groundwater beneath the Site is treated.

Under this alternative, only minimal groundwater that exceeds RBCs protective of potential future residents and occupational site users will be left in place. Institutional controls would be used to mitigate residual risk on the Site. An EES would document the following requirement:

- Groundwater at the Site will not be extracted for drinking water, industrial use, or other purposes.

Effectiveness: Alternative 3 effectively eliminates the potential for current and future Site users to come into direct contact with contaminated soil and groundwater by removing contaminants from the Site and by preventing the future use of groundwater.

Long-term Reliability: Alternative 3 permanently removes the impacted soil and treats most of the impacted groundwater. An EES further reduces risk by preventing use of Site groundwater. Implementation of an MNA program will provide added confidence in residual contaminant concentrations and potential flux. Therefore Alternative 3 is reliable in the long-term.

Implementability: Alternative 3 is considered moderately complex to implement. Shoring may be required.

Implementation Risk: Alternative 3 implementation risk is low. Subcontractors hired to conduct the soil removal will be current with OSHA 40-Hour HAZWOPER training. Work would be performed under a site-specific HASP.

Sustainability: Alternative 3 is sustainable because most of the contamination is removed; however, this is partially offset by CO2 emissions generated by transport of large volumes of soil (estimated at 2,000 cubic yards) to an off-site landfill. Transport contractors will be encouraged to use diesel that includes 10% biofuel.

Climate Change Concerns: Similar to Alternatives 1 and 2, no Site-specific risk factors have been identified for the Site or this alternative.

Cost: The cost estimate to implement this alternative ranges from approximately $700,000 to $900,000.

6.0 PREFERRED REMEDIAL ALTERNATIVE

The preferred remedial alternative is Alternative 2, which, as can be seen in Table 1, has the highest cumulative score (57) compared to the Alternative 1 (43) and Alternative 3 (46). Alternative 2 outranks or equals the second highest alternative, Alternative 3, in all criteria except one (effectiveness). For effectiveness there is a very slight preference for Alternative 3 (source removal); however, this is outweighed by the preference for Alternative 2 in implementability, implementation risk, and cost (Table 1).

We appreciate the opportunity to be of service to the City Center Development Agency on this project. If you have any questions or comments regarding this report, please contact the undersigned at (503) 639-3400.

Sincerely,

Amec Foster Wheeler
Environment & Infrastructure, Inc. **REVIEWED BY:**

John L. Kuiper, RG
Principal Geologist

Russ Bunker, RG
Sr. Associate Geologist

JK/ay

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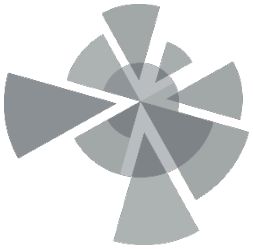
LIMITATIONS

This Analysis of Brownfield Cleanup Alternatives report was prepared exclusively for the City Center Development Agency by Amec Foster Wheeler Environment & Infrastructure, Inc. The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in Amec Foster Wheeler services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This Analysis of Brownfield Cleanup Alternatives report is intended to be used by the City Center Development Agency for the Saxony-Pacific Properties Site only, subject to the terms and conditions of its contract with Amec Foster Wheeler. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

The findings contained herein are relevant to the dates of the Amec Foster Wheeler site visits and should not be relied upon to represent conditions at later dates. In the event that changes in the nature, usage, or layout of the property or nearby properties are made, the conclusions and recommendations contained in this report may not be valid. If additional information becomes available, it should be provided to Amec Foster Wheeler so the original conclusions and recommendations can be modified as necessary.



TABLE

TABLE 1
Ranking of Alternatives
Saxony-Pacific Properties
Tigard, Oregon

Alternative	Remediation Plan	RANKING														Total Score
		Effectiveness 1 = low effectiveness 10 = high effectiveness		Reliability 1 = low reliability 10 = high reliability		Implementability 1 = complex implementability 10 = easy implementability		Implementation Risk 1 = high risk 10 = low risk		Sustainability 1 = low sustainability 10 = high sustainability		Climate Change 1 = low remedial resilience 10 = high remedial resilience		Estimated Cost 1 = high cost 10 = low cost		
1	No Action	1	Leaves all contaminated media in place, does not eliminate the potential for direct contact with soil, groundwater, or vapor. Does not reduce plume mobility.	1	Unreliable in long-term.	10	Easy	10	Low risk.	1	Not sustainable in long-term, potential health risks.	10	Resilient to climate change, no affects anticipated.	10	$10,000 (DEQ and other administrative costs for documenting no action)	43
2	Vapor mitigation (engineering controls), source removal ("hot spot" soil only), institutional controls, and monitored natural attenuation (MNA). Plan would include demolishing building and floor slab to allow access to impacted "source" soils, excavate source soils that are significant (e.g."hot spot" soils), install vapor mitigation system, confirmatory soil, soil gas, and groundwater sampling, Institutional Controls consisting of Easement and Equitable Servitudes (EES) that will enforce the maintenance of a vapor mitigation system and prevent use of site groundwater.	8	Installs a barrier to prevent soil vapor from reaching building occupants. MNA provides greater confidence in long-term plume stability and/or reduction.	9	Reliable. Makes contaminant pathway incomplete.	8	Relatively easy. Utilizes available contractors and materials.	8	Low risk. Increased worker exposure to contaminants.	8	Sustainable, particularly with addition of solar-powered ventilation.	10	Resilient to climate change, no affects anticipated.	6	Approximately $400,000 to $475,000 depending on if SVE is passive or active (includes cleanup plans, removal of building/slap to access source soils, removal of source soils, soil and soil gas confirmation sampling, monitoring well installation and sampling for one year of MNA) (includes $25,000 in DEQ oversight costs)	57
3	Source removal (both soil and groundwater), institutional controls, and monitored natural attenuation (MNA). Plan would include demolishing building and floor slab to allow access to impacted "source" soils, excavate all impacted soils to groundwater table, install combined vapor mitigation and in-situ groundwater air sparging system, confirmatory soil, soil gas, and groundwater sampling, institutional controls consisting of EES that will enforce the maintenance of a vapor mitigation system and prevent use of site groundwater, MNA.	9	Removes most contaminant mass and installs a barrier to prevent residual soil vapor from reaching building occupants. MNA provides greater confidence in cleanup efficacy.	9	Reliable. Makes contaminant pathway incomplete.	4	Moderately complex	5	Low risk. Increased worker exposure to contaminants.	8	Sustainable because most contamination removed; however, this is partially offset by carbon dioxide emissions generated by transport of large volumes of soil (estimated at 2,000 cubic yards) to an off-site landfill.	10	Resilient to climate change, no affects anticipated.	1	Approximately $700,000 to $900,000 depending on final excavation dimensions and shoring requirements (includes cleanup plans, removal of building/slab to access source/impacted soils, removal of source/impacted soils, soil and soil gas confirmation sampling, in-situ sparging and active SVE system installation, monitoring well installation, and sampling for one year of monitored natural attenuation (MNA)) (includes $40,000 in DEQ oversight costs)	46

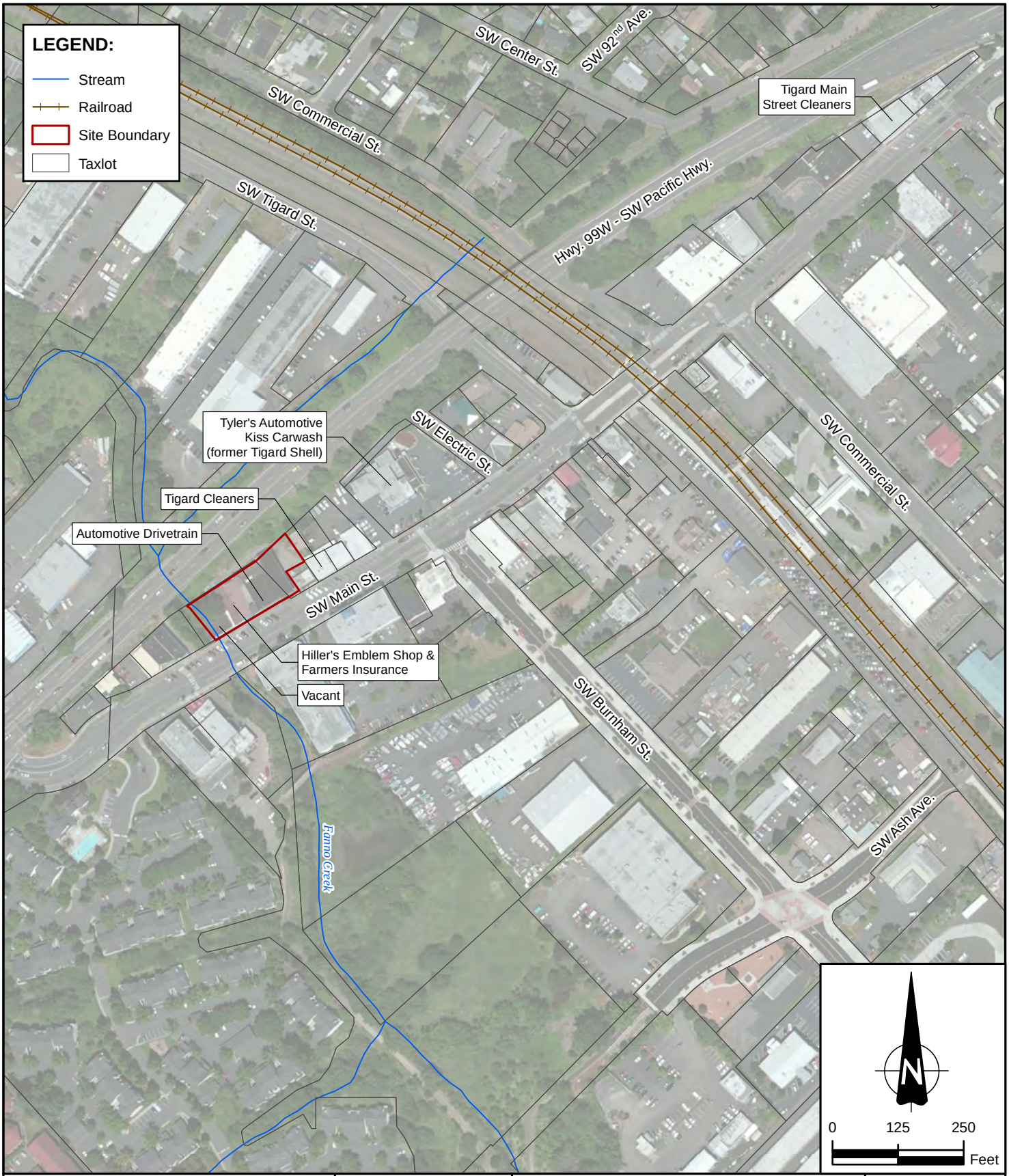
FIGURES

CITY CENTER DEVELOPMENT AGENCY	amec foster wheeler	ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES SAXONY-PACIFIC PROPERTY 12535 SW MAIN STREET, TIGARD, OREGON	DATE: NOVEMBER 2015 SCALE: 1 " = 1,000 '
Amec Foster Wheeler Environment & Infrastructure, Inc. 7376 S.W. Durham Road Portland, OR 97224		SITE LOCATION MAP	PROJECT NO.: 5-61M-12680-3 FIGURE: 1

DRAWN BY: SD CHECKED BY: JK

DRAFT

K:\12000\12600\12680\126803\dwg_ABCA\Figure 1 - Site Location Map.mxd - stephane.descombes - 11/16/2015 - 9:19:08 AM



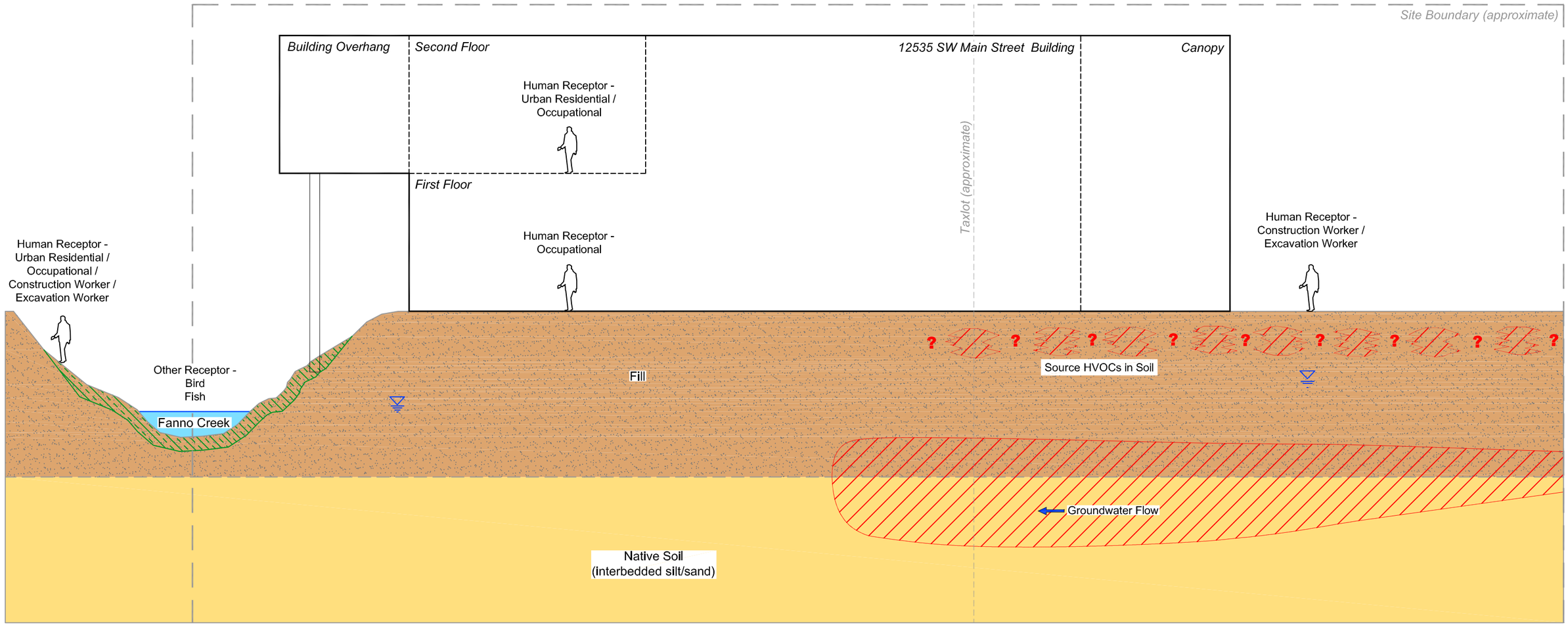
CITY CENTER DEVELOPMENT AGENCY		ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES SAXONY-PACIFIC PROPERTY 12535 SW MAIN STREET, TIGARD, OREGON	DATE: NOVEMBER 2015 SCALE: 1 " = 250 '
Amec Foster Wheeler Environment & Infrastructure, Inc. 7376 S.W. Durham Road Portland, OR 97224	amec foster wheeler	SITE PLAN DRAFT	PROJECT NO. 5-61M-12680-3 FIGURE 2

DRAWN BY: SD CHECKED BY: JK

K:\12000\12600\12680\126803\dwg_ABCA\Figure 2 - Site Plan.mxd - stephane.descombes - 11/16/2015 - 9:21:45 AM

LEGEND

- GROUNDWATER FLOW
- RANGE OF WATER TABLE FLUCTUATION
- HVOCs (ABOVE RBCs)
- LOW-LEVEL TPH, PAHs, METALS, PCBs (SOURCE UNKNOWN)



CITY CENTER DEVELOPMENT AGENCY

Amec Foster Wheeler
Environment & Infrastructure, Inc.
7376 S.W. Durham Road
Portland, OR 97224

amec foster wheeler

ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES
SAXONY-PACIFIC PROPERTY
12535 SW MAIN STREET, TIGARD, OREGON

SCHEMATIC CONCEPTUAL SITE MODEL

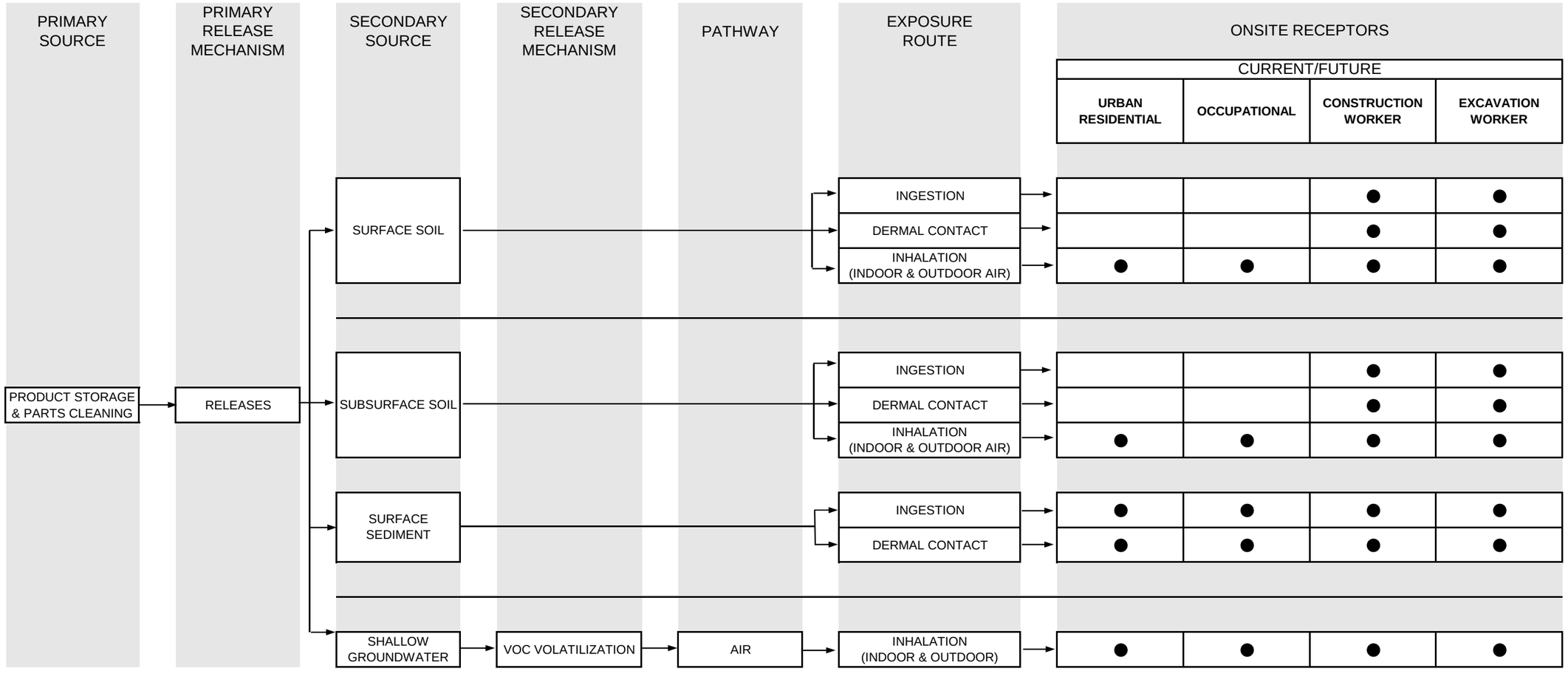
DRAFT

DATE	NOVEMBER 2015
SCALE	NOT TO SCALE
PROJECT NO.	5-61M-12680-3
FIGURE	3

DRAWN BY: SD CHECKED BY: JKH

K:\12000\12600\12680\126803\dwg_ABCA\Figure 3 – Schematic Conceptual Site Model.dwg – – Nov. 16, 2015 9:28am – stephane.descombes

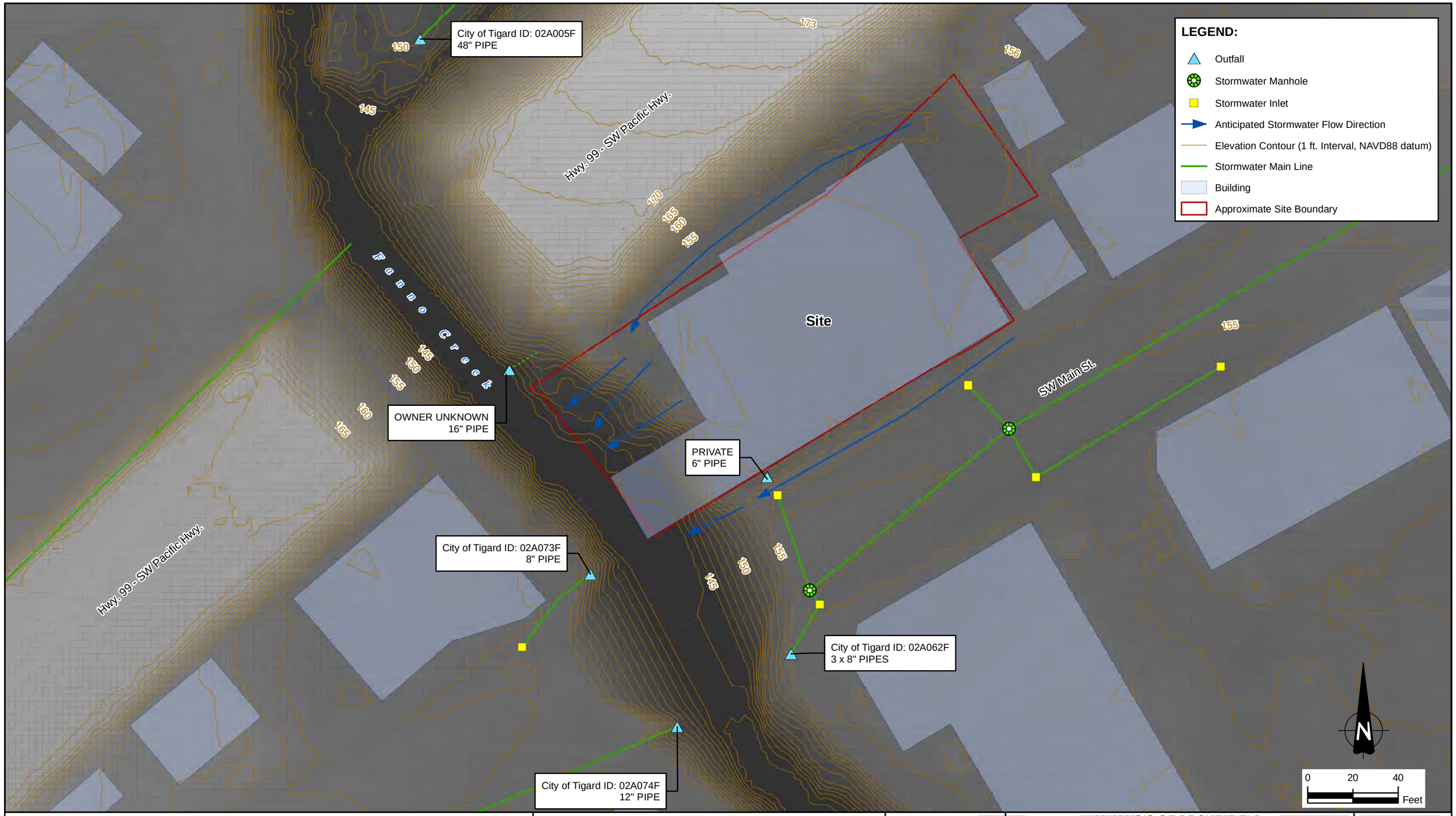
FIGURE 4
HUMAN HEALTH RISK ASSESSMENT (HHRA) CONCEPTUAL SITE MODEL (CSM)



LEGEND

● POTENTIALLY COMPLETE PATHWAY

→ COMPLETE PATHWAY



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ANALYSIS OF BROWNFIELD
CLEANUP ALTERNATIVES
SAXONY-PACIFIC PROPERTY
12535 SW MAIN STREET, TIGARD, OREGON

SITE TOPOGRAPHY AND
ANTICIPATED STORMWATER
FLOW DIRECTIONS

DATE
NOVEMBER 2015

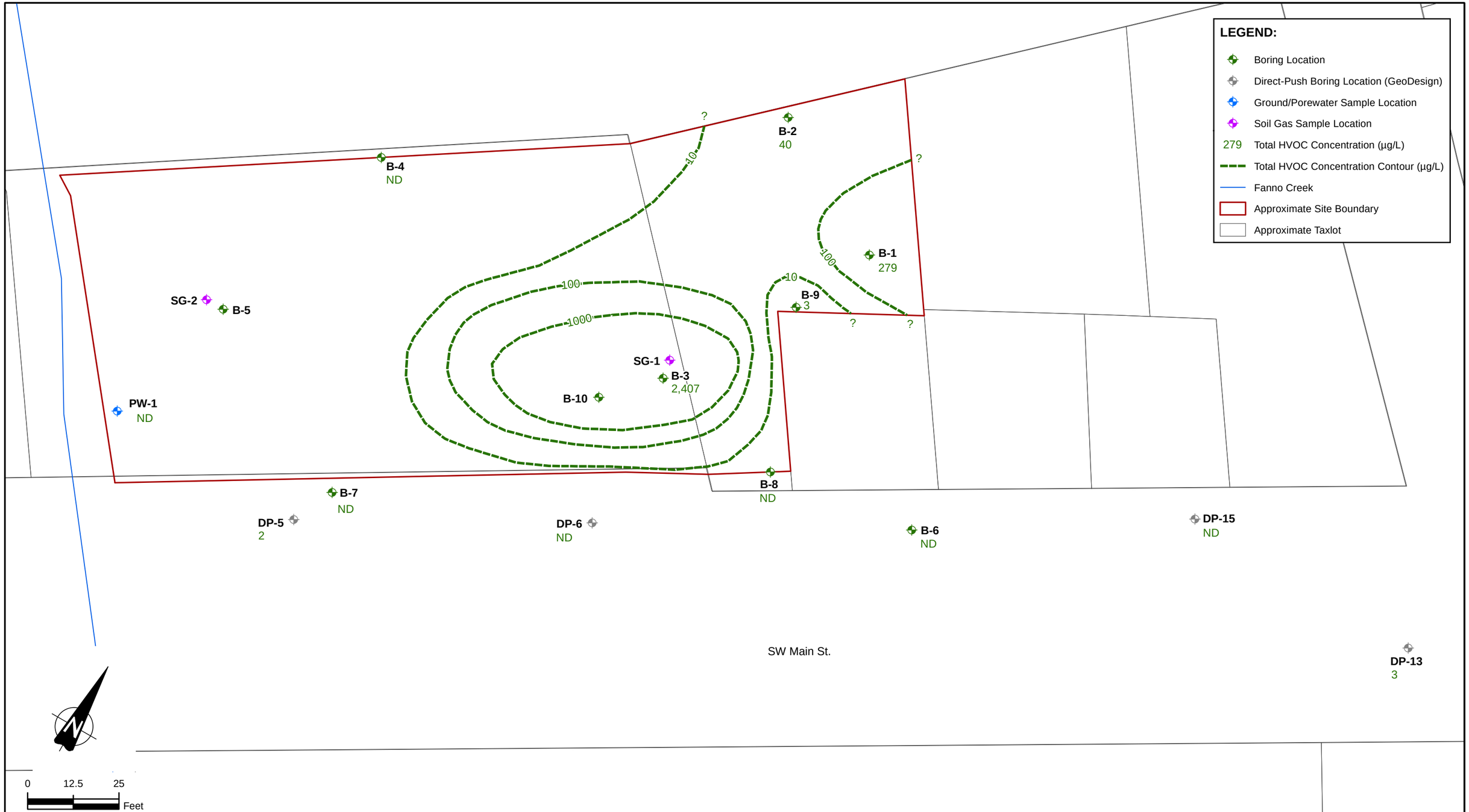
SCALE
1 " = 40 '

PROJECT NO.
5-61M-12680-3

FIGURE
5

DRAWN BY: SD CHECKED BY: JKH

K:\12000\12600\12680\126803\dwg_ABCA\Figure 5 - Site Topography and Anticipated Stormwater Flow Directions.mxd - stephane.descombes - 11/16/2015 - 9:33:22 AM



NOTE:
1. Not from measurements made by licensed surveyor.
2. Taxlot data obtained from Metro Data Resource Center:
ftp.metro-region.org

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ANALYSIS OF BROWNFIELD
CLEANUP ALTERNATIVES
SAXONY-PACIFIC PROPERTY
12535 SW MAIN STREET, TIGARD, OREGON

GROUNDWATER TOTAL HVOC
CONCENTRATION CONTOUR MAP

DRAFT

DATE	NOVEMBER 2015
SCALE	1 " = 25 '
PROJECT NO.	5-61M-12680-3
FIGURE	6

DRAWN BY: SD CHECKED BY: JKH

K:\12000\12600\12680\126803\dwg_ABCA\Figure 6 - Groundwater Total HVOC Concentration Contour Map.mxd - stephane.descombes - 11/16/2015 - 9:40:13 AM

TABLE 2.1
Analytical Laboratory Results - Soil Samples
Saxony-Pacific Properties

Soil Analyte	Units	Screening Criteria				Soil Samples			
		DEQ RBCss Urban Residential	DEQ RBCso Urban Residential	DEQ RBCsi Urban Residential	DEQ RBCsw Urban Residential	B2-8 (7.5 to 8.5 ft bgs)	B3-14 (13.5 to 14.5 ft bgs)	B4-14 (13.5 to 14.5 ft bgs)	B10 at 1.5 ft. (1.0 to 1.5 ft bgs)
TPH by NWTPH-HCID									
Gasoline Range (C6-C10)	mg/kg	na	na	na	na	26.4 U	25.1 U	25.8 U	NA
Diesel Range (C10-C22)	mg/kg	na	na	na	na	66.1 U	62.8 U	64.5 U	NA
Oil Range (C22-C40)	mg/kg	na	na	na	na	132 U	126 U	129 U	NA
TPH by NWTPH-Gx									
Gasoline Range (C6-C10)	mg/kg	2,500	5,900	94	31	NA	NA	NA	NA
TPH by NWTPH-Dx									
Diesel Range (C10-C22)	mg/kg	2,200	>Max	>Max	9,500	NA	NA	NA	NA
Oil Range (C22-C40)	mg/kg	5,700	>Max	>Max	>Max	NA	NA	NA	NA
Total Metals by 6000/7000 Series									
Arsenic	mg/kg	1.0	NV	NV	np	NA	NA	NA	NA
Barium	mg/kg	31,000	NV	NV	np	NA	NA	NA	NA
Cadmium	mg/kg	78	NV	NV	np	NA	NA	NA	NA
Chromium	mg/kg	230,000	NV	NV	np	NA	NA	NA	NA
Lead	mg/kg	400	NV	NV	30	NA	NA	NA	NA
Mercury	mg/kg	47	NV	NV	np	NA	NA	NA	NA
Selenium	mg/kg	na	na	na	na	NA	NA	NA	NA
Silver	mg/kg	780	na	na	na	NA	NA	NA	NA
PAHs by EPA 8270SIM									
Acenaphthene	µg/kg	9,400,000	>Max	>Max	>Csat	NA	NA	NA	NA
Acenaphthylene	µg/kg	na	na	na	na	NA	NA	NA	NA
Anthracene	µg/kg	47,000,000	>Max	>Max	>Csat	NA	NA	NA	NA
Benz(a)anthracene	µg/kg	340	NV	NV	10,000	NA	NA	NA	NA
Benzo(a)pyrene	µg/kg	34	NV	NV	2,700	NA	NA	NA	NA
Benzo(b+k)fluoranthene *	µg/kg	340	>Csat	>Csat	>Csat	NA	NA	NA	NA
Benzo(g,h,i)perylene	µg/kg	na	na	na	na	NA	NA	NA	NA
Chrysene	µg/kg	32,000	>Csat	>Csat	>Csat	NA	NA	NA	NA
Dibenz(a,h)anthracene	µg/kg	34	NV	NV	>Csat	NA	NA	NA	NA
Fluoranthene	µg/kg	4,600,000	>Max	>Max	>Csat	NA	NA	NA	NA
Fluorene	µg/kg	6,300,000	>Max	>Max	>Csat	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	µg/kg	340	NV	NV	>Csat	NA	NA	NA	NA
Naphthalene	µg/kg	25,000	18,000	18,000	470	NA	NA	NA	NA
Phenanthrene	µg/kg	na	na	na	na	NA	NA	NA	NA
Pyrene	µg/kg	3,400,000	>Csat	>Csat	>Csat	NA	NA	NA	NA
VOCs by EPA 8260B									
VOCs	µg/kg	various	various	various	various	ND	ND	ND	ND

Notes:

* = RBC for Benzo(b)fluoranthene used
>Csat = This soil RBC exceeds the limit of three-phase partitioning.
>MAX = Constituent RBC for this pathway is greater than 100,000 mg/kg.
µg/kg = micrograms per kilogram
bgs = below ground surface
DEQ = Oregon Department of Environmental Quality
DET = Detected
ft. = feet
in. = inches
mg/kg = milligrams per kilogram
NA = not analyzed for this constituent
na = not applicable
ND = No detections
np = leaching to groundwater RBCs not provided for these inorganic chemicals
NV = considered "nonvolatile" for the purposes of the exposure calculations.
NWTPH = Northwest Method Total Petroleum Hydrocarbons
PAHs = Polynuclear aromatic hydrocarbons
RBC = Risk Based Concentration from DEQ, 2012. Risk-Based Concentrations for Individual Chemicals
RBCsi = RBC for vapor intrusion into buildings exposure pathway
RBCso = RBC for volatilization to outdoor air exposure pathway
RBCss = RBC for soil ingestion, dermal contact, and inhalation exposure pathways
RBCsw = RBC for leaching to groundwater pathway
SLV = Screening Level Value from DEQ. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. April 3, 2007.
U = analyte not detected at method reporting limit concentration indicated
VOCs = Volatile Organic Compounds

TABLE 2.2
Analytical Laboratory Results - Groundwater Samples
Saxony-Pacific Properties

Groundwater Analyte	Units	Screening Criteria				Groundwater Samples									
		DEQ RBCtw Urban Residential	DEQ RBCwo Urban Residential	DEQ RBCwi Urban Residential	DEQ RBCwe Construction & Excavation Worker	B1A-GW	B2-GW	B3-GW	B4-GW	B-6	B-7	B-8	B-9	PW-1	PW-1 Dup
TPH by NWTPH-HCID															
Gasoline Range (C6-C10)	mg/L	110	>S	22,000	14,000	0.0980 U	0.0935 U	0.0935 U	0.0971 U	NA	NA	NA	NA	NA	NA
Diesel Range (C10-C22)	mg/L	100	>S	>S	>S	0.245 U	0.234 U	0.234 U	0.243 U	NA	NA	NA	NA	NA	NA
Oil Range (C22-C40)	mg/L	300	>S	>S	>S	0.245 U	0.234 U	0.234 U	0.243 U	NA	NA	NA	NA	NA	NA
VOCs by EPA 8260B															
Acetone	µg/L	na	na	na	na	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	NA	NA
Benzene	µg/L	1.7	7,600	510	1,700	0.250 U	0.43	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	0.250 U	NA	NA
Bromobenzene	µg/L	na	na	na	na	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Bromochloromethane	µg/L	na	na	na	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromodichloromethane	µg/L	0.59	5,000	1,000	450	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromoform	µg/L	12.0	570,000	200,000	14,000	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromomethane	µg/L	17.0	40,000	2,800	1,200	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Butanone (MEK)	µg/L	na	na	na	na	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	NA	NA
n-Butylbenzene	µg/L	na	na	na	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	NA	NA
sec-Butylbenzene	µg/L	na	na	na	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	NA	NA
tert-Butylbenzene	µg/L	na	na	na	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	NA	NA
Carbon Tetrachloride	µg/L	1.7	2,900	140	1,700	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Chlorobenzene	µg/L	180	NP	55,000	10,000	0.500 U	0.500 U	0.550 J	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Chloroethane	µg/L	42,000	NP	2,800,000	2,400,000	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Chloroform	µg/L	0.98	3,000	220	720	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Chloromethane	µg/L	380	500,000	26,000	22,000	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Chlorotoluene	µg/L	na	na	na	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
4-Chlorotoluene	µg/L	na	na	na	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromo-3-chloropropane	µg/L	na	na	na	na	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Dibromochloromethane	µg/L	na	na	na	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dibromoethane (EDB)	µg/L	0.031	520	130	28	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Dibromomethane	µg/L	na	na	na	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichlorobenzene	µg/L	740	NP	NP	37,000	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,3-Dichlorobenzene	µg/L	na	na	na	na	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,4-Dichlorobenzene	µg/L	2	11,000	1,000	1,500	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Dichlorodifluoromethane	µg/L	na	na	na	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,1-Dichloroethane	µg/L	na	na	na	na	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,2-Dichloroethane (EDC)	µg/L	0.69	5,100	690	630	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,1-Dichloroethene	µg/L	680	550,000	27,000	43,000	0.500 U	0.500 U	6.23	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
cis-1,2-Dichloroethene	µg/L	150	NP	NP	24,000	**173**	22.7	**1,320**	0.500 U	0.500 U	0.500 U	0.500 U	1.24	0.500 U	0.500 U
trans-1,2-Dichloroethene	µg/L	210	430,000	28,000	14,000	1.02	0.500 U	7.89	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,2-Dichloropropane	µg/L	na	na	na	na	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,3-Dichloropropane	µg/L	na	na	na	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2,2-Dichloropropane	µg/L	na	na	na	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2-Dichloropropene	µg/L	na	na	na	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
cis-1,3-Dichloropropene	µg/L	na	na	na	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
trans-1,3-Dichloropropene	µg/L	na	na	na	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Ethylbenzene	µg/L	6.7	22,000	1,300	4,400	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	NA	NA
Hexachlorobutadiene	µg/L	na	na	na	na	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Hexanone	µg/L	na	na	na	na	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	NA	NA

TABLE 2.2
Analytical Laboratory Results - Groundwater Samples
Saxony-Pacific Properties

Groundwater Analyte	Units	Screening Criteria				Groundwater Samples									
		DEQ RBCtw Urban Residential	DEQ RBCwo Urban Residential	DEQ RBCwi Urban Residential	DEQ RBCwe Construction & Excavation Worker	B1A-GW	B2-GW	B3-GW	B4-GW	B-6	B-7	B-8	B-9	PW-1	PW-1 Dup
Isopropylbenzene	µg/L	na	na	na	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	NA	NA
4-Isopropyltoluene	µg/L	na	na	na	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	NA	NA
4-Methyl-2-pentanone (MiBK)	µg/L	na	na	na	na	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	NA	NA
Methyl Tert-butyl ether (MTBE)	µg/L	53	610,000	110,000	62,000	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	NA	NA
Methylene chloride	µg/L	na	na	na	na	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Naphthalene	µg/L	0.78	8,400	1,800	500	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	NA	NA
n-Propylbenzene	µg/L	na	na	na	na	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	NA	NA
Styrene	µg/L	3,200	NP	NP	160,000	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	NA	NA
1,1,1,2-Tetrachloroethane	µg/L	na	na	na	na	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,1,2,2-Tetrachloroethane	µg/L	na	na	na	na	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Tetrachloroethene (PCE)	µg/L	49	110,000	5,900	5,400	16.5	2.39	**106**	0.500 U	0.500 U	0.500 U	0.500 U	1.22	0.500 U	0.500 U
Toluene	µg/L	4,600	NP	NP	210,000	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	NA	NA
1,2,3-Trichlorobenzene	µg/L	na	na	na	na	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
1,2,4-Trichlorobenzene	µg/L	na	na	na	na	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
1,1,1-Trichloroethane	µg/L	18,000	NP	1,200,000	1,100,000	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,1,2-Trichloroethane	µg/L	0.83	5,300	800	49	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Trichloroethene (TCE)	µg/L	1.7	6,600	380	430	**10.9**	1.07	**803**	0.500 U	0.500 U	0.500 U	0.500 U	0.5	0.500 U	0.500 U
Trichlorofluoromethane	µg/L	2,600.0	590,000	27,000	160,000	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
1,2,3-Trichloropropane	µg/L	na	na	na	na	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trimethylbenzene	µg/L	29.0	na	5,000	1,700	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	NA	NA
1,3,5-Trymethylbenzene	µg/L	730.0	na	na	23,000	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	NA	NA
Vinyl Chloride	µg/L	0.059	500	22	1,200	**77.2**	**13.8**	**164**	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Xylenes	µg/L	410.000	NP	58,000	23,000	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	NA	NA

Notes:
>S = RBC exceeds the solubility limit.
Bold = constituent concentration exceeds one or more screening criteria
DEQ = Oregon Department of Environmental Quality
J = estimated value
NA = not analyzed for this constituent
na =not applicable
NP = not published; value exceeds either Csat, S, or Pv
NWTPH = Northwest Method Total Petroleum Hydrocarbons
RBC = Risk Based Concentration
RBCtw = RBC for ingestion and inhalation from tapwater exposure pathways
RBCwe = RBC for groundwater in excavation pathway
RBCwi = RBC for vapor intrusion into buildings exposure pathway
RBCwo = RBC for volatilization to outdoor air exposure pathway
U = analyte not detected at concentration greater than method reporting limit indicated
VOCs = Volatile organic compounds

TABLE 2.3
Analytical Laboratory Results - Soil Gas Samples
Detected Constituents Only
Saxony-Pacific Properties

Soil Gas Analyte	CAS Registry Number	Screening Criteria	Soil Gas Samples	
		DEQ RBCsv Urban Residential	SG-1	SG-2
VOCs by TO-15		**(µg/m^3)**	**(µg/m^3)**	**(µg/m^3)**
Acetone (2-Propanone)	67-64-1	na	7.5 U	8.6
Dichlorodifluoromethane (Freon-12)	75-71-8	na	2.1	2.0
Dichloroethene, cis-1,2-	156-59-2	>Pv	2.7	0.79 U
alpha-Pinene	80-56-8	na	0.75 U	1.4
Propene (Propylene)	115-07-1	na	0.92	0.79 U
Tetrachloroethylene (PCE); C2Cl4	127-18-4	5,100	60	0.79 U
Toluene; C7H8	108-88-3	1,000,000	1.3	1.3
Trichloroethylene; C2HCl3	79-01-6	200	6.9	0.79 U
Trichlorofluoromethane (Freon 11)	75-69-4	150,000	1.1	1.0
Helium Tracer		**(ppmV)**	**(ppmV)**	**(ppmV)**
Helium	7440-59-7	na	38 U	5,900

Notes:
>Pv = the air concentration reported for the RBC exceeds the vapor pressure of the pure chemical.
µg/m^3 = micrograms per cubic meter
Bold = constituent concentration exceeds one or more screening criteria
DEQ = Oregon State Department of Environmental Quality
NA = not analyzed for this constituent
na =not applicable
NWTPH = Northwest Method Total Petroleum Hydrocarbons
ppmV = parts per million by volume
RBC = Risk Based Concentration
RBCsv = RBC for vapor intrusion into building exposure pathways
TO-15 = United States Environmental Protection Agency (EPA) Compendium Method Toxic Organic 15
U = analyte not detected at concentration greater than method reporting limit indicated
VOCs = Volatile Organic Compounds

TABLE 2.4a
Analytical Laboratory Results - Sediment Samples
Human Health Screening
Saxony-Pacific Properties

Soil Analyte	Units	Screening Criteria						Sediment Samples										
		DEQ RBCss Urban Residential	DEQ RBCso Urban Residential	DEQ RBCsi Urban Residential	DEQ RBCsw Urban Residential	Human Health General SLV	Human Health Subsistence SLV	SS-1 (0 to 6 in. bgs)	SS-2 (6 to 12 in. bgs)	SS-3 (0 to 6 in. bgs)	SS-4 (0 to 12 in. bgs)	SS-4 (12 to 24 in. bgs)	SS-4 (12 to 24 in. bgs) Dup	SS-4 (24 to 36 in. bgs)	SS-5 (0 to 12 in. bgs)	SS-6 (0 to 12 in. bgs)	SS-7 (0 to 12 in. bgs)	SS-8 (0 to 12 in. bgs)
TPH by NWTPH-HCID																		
Gasoline Range (C6-C10)	mg/kg	na	na	na	na	na	na	19.8 U	19.0 U	19.0 U	na	na	na	na	na	na	na	na
Diesel Range (C10-C22)	mg/kg	na	na	na	na	na	na	49.4 U	47.4 U	47.5 U	na	na	na	na	na	na	na	na
Oil Range (C22-C40)	mg/kg	na	na	na	na	na	na	98.8 U	DET	95.0 U	na	na	na	na	na	na	na	na
TPH by NWTPH-Gx																		
Gasoline Range (C6-C10)	mg/kg	2,500	5,900	94	31	na	na	NA	NA	NA	na	na	na	na	na	na	na	na
TPH by NWTPH-Dx																		
Diesel Range (C10-C22)	mg/kg	2,200	>Max	>Max	9,500	na	na	NA	98.9 U	NA	54.8 U	112 U	257 U	262 U	427 U	25 U	95.9 U	37.3 U
Oil Range (C22-C40)	mg/kg	5,700	>Max	>Max	>Max	na	na	NA	271	NA	287	495	605	538	50 U	870	485	229
Total Metals by 6000/7000 Series																		
Antimony	mg/kg	na	na	na	na	na	na	NA	NA	NA	1.83 U	1.73 U	1.83 U	190 U	0.957	1.67 U	1.51 U	1.51 U
Arsenic	mg/kg	1.0	NV	NV	np	7	7	3.75	2.69	3.47	**6.58**	5.20	4.46	4.57	**18.2**	3.78	**6.91**	**19.5**
Barium	mg/kg	31,000	NV	NV	np	na	na	116	83.0	94.9	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	310	NV	NV	np	na	na	NA	NA	NA	0.493	0.449	0.402	0.379	NA	0.500	NA	NA
Cadmium	mg/kg	78	NV	NV	np	1	1	0.969 U	1.03 U	1.01 U	0.402	0.380	0.439	0.493	0.478	**2.43**	0.408	0.288
Chromium	mg/kg	230,000	NV	NV	np	na	na	11.4	11.7	11.6	19.0	16.3	15.8	18.5	15.5	22.6	18.2	17.4
Copper	mg/kg	6,200	NV	NV	np	na	na	NA	NA	NA	21.3	19.4	17.9	20.0	31.4	147	28.3	16.2
Lead	mg/kg	400	NV	NV	30	17	17	13.0	**23.1**	13.2	**18.7**	**19.4**	**24.2**	**30.2**	**36.6**	**69.1**	**48.8**	14.7
Mercury	mg/kg	47	NV	NV	np	0.07	0.07	0.0775 U	0.0821 U	0.0810 U	**0.0747**	0.138 U	0.146 U	**0.0779**	0.116 U	**0.0766**	0.121 U	0.121 U
Nickel	mg/kg	3100	NV	NV	np	na	na	NA	NA	NA	14.3	13.8	11.1	12.9	17.5	44.3	16.6	**21**
Selenium	mg/kg	na	na	na	na	2	2	1.94 U	2.05 U	2.02 U	7.31 U	6.91 U	7.31 U	7.58 U	1.45 U	1.73	1.51 U	1.51 U
Silver	mg/kg	780	na	na	na	na	na	0.969 U	1.03 U	1.01 U	0.292	0.259	0.201	0.379	0.290 U	0.633	0.151	0.303 U
Thallium	mg/kg	na	na	na	na	na	na	NA	NA	NA	0.365 U	0.346 U	0.365 U	0.379 U	0.290 U	0.333 U	0.302 U	0.303 U
Zinc	mg/kg	na	na	na	na	na	na	NA	NA	NA	199	179	171	167	280	229	200	255
PAHs by EPA 8270D SIM																		
Acenaphthene	µg/kg	9,400,000	>Max	>Max	>Csat	na	na	9.69 U	16.8	9.34 U	17.0 U	16.6 U	78.9 U	89.1 U	69.2 U	15.1 U	63.7 U	13.1 U
Acenaphthylene	µg/kg	na	na	na	na	na	na	9.69 U	9.51 U	9.34 U	17.0 U	16.6 U	78.9 U	89.1 U	69.2 U	22.9	63.7 U	13.1 U
Anthracene	µg/kg	47,000,000	>Max	>Max	>Csat	na	na	9.69 U	26.0	9.34 U	17.0 U	11.2	78.9 U	89.1 U	69.2 U	18.5	63.7 U	13.1 U
Benz(a)anthracene	µg/kg	340	NV	NV	10,000	na	na	17.7	114	40.4	45.0	54.8	115	249	68.6	48.2	40.0	8.03
Benzo(a)pyrene	µg/kg	34	NV	NV	2,700	na	na	18.1	**125**	**41.4**	**56.6**	**62.5**	**109**	**293**	**52.2**	**104**	63.7 U	19.2
Benzo(b+k)fluoranthene *	µg/kg	340	>Csat	>Csat	>Csat	na	na	40.9	204	74.4	114	130	209	**498**	105	165	127 U	**27.5**
Benzo(g,h,i)perylene	µg/kg	na	na	na	na	na	na	26.1	98.8	37.6	54.1	54.8	82.7	218	52.3	126	63.7 U	22.2
Chrysene	µg/kg	32,000	>Csat	>Csat	>Csat	na	na	27.8	163	51.2	71.8	86.5	132	269	75.5	100	40.2	12.5
Dibenz(a,h)anthracene	µg/kg	34	NV	NV	>Csat	na	na	9.69 U	22.8	9.34 U	17.0 U	10.4	78.9 U	**45.7**	69.2 U	12.5	63.7 U	13.1 U
Fluoranthene	µg/kg	4,600,000	>Max	>Max	>Csat	510	62	39.7	**297**	**96.5**	**119**	**128**	**252**	**432**	**109**	**140**	**64.9**	10.2
Fluorene	µg/kg	6,300,000	>Max	>Max	>Csat	na	na	9.69 U	16.2	9.34 U	17.0 U	16.6 U	78.9 U	89.1 U	69.2 U	15.1 U	63.7 U	13.1 U
Indeno(1,2,3-cd)pyrene	µg/kg	340	NV	NV	>Csat	na	na	21.9	102	36.8	50.6	51.8	83.3	230	44.8	106	63.7 U	17.5
Naphthalene	µg/kg	25,000	18,000	18,000	470	na	na	9.69 U	9.51 U	9.34 U	17.0 U	16.6 U	78.9 U	89.1 U	69.2 U	11.2	63.7 U	13.1 U
Phenanthrene	µg/kg	na	na	na	na	na	na	13.9	199	37.2	43.6	48.9	106	185	69.2 U	46.1	31.9	13.1 U
Pyrene	µg/kg	3,400,000	>Csat	>Csat	>Csat	380	47	42.2	**302**	**89.4**	**117**	**131**	**248**	**451**	**115**	**177**	**84.8**	17.1
PCBs by EPA 8082A																		
Arochlor 1016	µg/kg							NA	NA	NA	6.04 U	14.2 U	13.8 U	5.85 U	11.7 U	5.12 U	11.3 U	10.8 U
Arochlor 1221	µg/kg							NA	NA	NA	6.04 U	14.2 U	13.8 U	5.85 U	11.7 U	5.12 U	11.3 U	10.8 U
Arochlor 1232	µg/kg							NA	NA	NA	6.04 U	14.2 U	13.8 U	5.85 U	11.7 U	5.12 U	11.3 U	10.8 U
Arochlor 1242	µg/kg							NA	NA	NA	6.04 U	14.2 U	13.8 U	5.85 U	11.7 U	5.12 U	11.3 U	10.8 U
Arochlor 1248	µg/kg							NA	NA	NA	6.04 U	14.2 U	13.8 U	5.85 U	11.7 U	5.12 U	11.3 U	10.8 U
Arochlor 1254	µg/kg							NA	NA	NA	4.98	14.2 U	13.8 U	6.37	5.96	3.89	12.6	10.8 U
Arochlor 1260	µg/kg	310 (total)	>Csat	>Csat	550 (total)	0.39 (total)	0.048 (total)	NA	NA	NA	5.12	14.2 U	13.8 U	5.9	11.7 U	13.6	11.3 U	10.8 U

TABLE 2.4a
Analytical Laboratory Results - Sediment Samples
Human Health Screening
Saxony-Pacific Properties

Soil Analyte	Units	Screening Criteria						Sediment Samples										
		DEQ RBCss Urban Residential	DEQ RBCso Urban Residential	DEQ RBCsi Urban Residential	DEQ RBCsw Urban Residential	Human Health General SLV	Human Health Subsistence SLV	SS-1 (0 to 6 in. bgs)	SS-2 (6 to 12 in. bgs)	SS-3 (0 to 6 in. bgs)	SS-4 (0 to 12 in. bgs)	SS-4 (12 to 24 in. bgs)	SS-4 (12 to 24 in. bgs) Dup	SS-4 (24 to 36 in. bgs)	SS-5 (0 to 12 in. bgs)	SS-6 (0 to 12 in. bgs)	SS-7 (0 to 12 in. bgs)	SS-8 (0 to 12 in. bgs)
Organochlorine Pesticides by EPA 8081B																		
Aldrin	µg/kg	25	>Csat	>Csat	54	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
alpha-BHC	µg/kg	na	na	na	na	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
beta-BHC	µg/kg	na	na	na	na	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
delta-BHC	µg/kg	na	na	na	na	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
gamma-BHC	µg/kg	na	na	na	na	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
cis-Chlordane	µg/kg							NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
trans-Chlordane	µg/kg	4200 (total)	>Csat	>Csat	6500 (total)	0.37 (total)	0.046 (total)	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
4,4'-DDD	µg/kg	6400	NV	NV	250000	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	4.53 U	1.88 U
4,4'-DDE	µg/kg	4500	>Max	>Max	250000	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
4,4'-DDT	µg/kg	4500	NV	NV	>Csat	0.33	0.040	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Dieldrin	µg/kg	80	>Csat	>Csat	25	0.0081	0.0010	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Endosulfan I	µg/kg					na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Endosulfan II	µg/kg	730000 (total)	>Max	>Max	>Csat	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Endosulfan sulfate	µg/kg	na	na	na	na	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Endrin	µg/kg	37000	NV	NV	>Csat	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Endrin Aldehyde	µg/kg	na	na	na	na	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Endrin ketone	µg/kg	na	na	na	na	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Heptachlor	µg/kg	280	760000	760000	5900	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Heptachlor epoxide	µg/kg	140	NV	NV	540	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Methoxychlor	µg/kg	na	na	na	na	na	na	NA	NA	NA	8.43 U	7.52 U	7.95 U	8.42 U	5.85 U	6.80 U	5.91 U	5.65 U
Chlordane (Technical)	µg/kg	4200	>Csat	>Csat	6500	0.37 (total)	0.046 (total)	NA	NA	NA	84.3 U	75.2 U	79.5 U	84.2 U	58.5 U	68.0 U	59.1 U	56.5 U
Toxaphene (Total)	µg/kg	1200	NV	NV	14000	na	na	NA	NA	NA	84.3 U	75.2 U	79.5 U	84.2 U	58.5 U	68.0 U	59.1 U	56.5 U
Chlorinated Herbicides by EPA 8151A																		
2,4-D	mg/kg	NV	NV	NV	NV	na	na	NA	NA	NA	0.60 U	0.53 U	0.53 U	0.57 U	0.47 U	0.52 U	0.4 U	0.4 U
2,4-DB	mg/kg	na	na	na	na	na	na	NA	NA	NA	0.60 U	0.53 U	0.53 U	0.57 U	0.47 U	0.52 U	0.4 U	0.4 U
2,4,5-T	mg/kg	na	na	na	na	na	na	NA	NA	NA	0.60 U	0.53 U	0.53 U	0.57 U	0.47 U	0.52 U	0.4 U	0.4 U
2,4,5-TP (Silvex)	mg/kg	na	na	na	na	na	na	NA	NA	NA	0.60 U	0.53 U	0.53 U	0.57 U	0.47 U	0.52 U	0.4 U	0.4 U
Dalapon	mg/kg	na	na	na	na	na	na	NA	NA	NA	0.60 U	0.53 U	0.53 U	0.57 U	0.47 U	0.52 U	0.4 U	0.4 U
Dicamba	mg/kg	na	na	na	na	na	na	NA	NA	NA	0.60 U	0.53 U	0.53 U	0.57 U	0.47 U	0.52 U	0.4 U	0.4 U
Dichloroprop	mg/kg	na	na	na	na	na	na	NA	NA	NA	0.60 U	0.53 U	0.53 U	0.57 U	0.47 U	0.52 U	0.4 U	0.4 U
Dinoseb	mg/kg	na	na	na	na	na	na	NA	NA	NA	0.90 U	0.80 U	0.80 U	0.86 U	0.70 U	0.78 U	0.60 U	0.60 U
MCPA	mg/kg	NV	NV	NV	NV	na	na	NA	NA	NA	90 U	80 U	80 U	86 U	70 U	78 U	60 U	60 U
MCPP	mg/kg	na	na	na	na	na	na	NA	NA	NA	90 U	80 U	80 U	86 U	70 U	78 U	60 U	60 U
Pentachlorophenol	mg/kg	NV	NV	NV	NV	0.25	0.030	NA	NA	NA	0.60 U	0.53 U	0.53 U	0.57 U	0.47 U	0.52 U	0.4 U	0.4 U
Picloram	mg/kg	na	na	na	na	na	na	NA	NA	NA	0.60 U	0.53 U	0.53 U	0.57 U	0.47 U	0.52 U	0.4 U	0.4 U

Notes:

* = RBC for Benzo(b)fluoranthene used
>Csat = This soil RBC exceeds the limit of three-phase partitioning.
>MAX = Constituent RBC for this pathway is greater than 100,000 mg/kg.
µg/kg = micrograms per kilogram
bgs = below ground surface
Bold = constituent concentration exceeds one or more screening criteria
DEQ = Oregon State Department of Environmental Quality
DET = Detected
ft. = feet
in. = inches
mg/kg = milligrams per kilogram
NA = not analyzed for this constituent
na = not applicable
np = leaching to groundwater RBCs not provided for these inorganic chemicals
NV = considered "nonvolatile" for the purposes of the exposure calculations.
NWTPH = Northwest Method Total Petroleum Hydrocarbons
PAHs = Polynuclear Aromatic Hydrocarbons
RBC = Risk Based Concentration from DEQ, 2012. Risk-Based Concentrations for Individual Chemicals
RBCsi = RBC for vapor intrusion into buildings exposure pathway
RBCso = RBC for volatilization to outdoor air exposure pathway
RBCss = RBC for soil ingestion, dermal contact, and inhalation exposure pathways
RBCsw = RBC for leaching to groundwater pathway
VOCs = Volatile or VOCs = Volatil VOCs = Volatile or VOCs = Vol VOCs = Volatile organic compounds
U = analyte not detected at method reporting limit concentration indicated

TABLE 2.4b
Analytical Laboratory Results - Sediment Samples
Ecological Screening
Saxony-Pacific Properties

Soil Analyte	Units	Ecological Risk Screening Levels		Sediment Samples										
		Freshwater Sediment SLV	Freshwater Fish SLV	SS-1 (0 to 6 in. bgs)	SS-2 (6 to 12 in. bgs)	SS-3 (0 to 6 in. bgs)	SS-4 (0 to 12 in. bgs)	SS-4 (12 to 24 in. bgs)	SS-4 (12 to 24 in. bgs) Dup	SS-4 (24 to 36 in. bgs)	SS-5 (0 to 12 in. bgs)	SS-6 (0 to 12 in. bgs)	SS-7 (0 to 12 in. bgs)	SS-8 (0 to 12 in. bgs)
TPH by NWTPH-HCID														
Gasoline Range (C6-C10)	mg/kg	na	na	19.8 U	19.0 U	19.0 U	na	na	na	na	na	na	na	na
Diesel Range (C10-C22)	mg/kg	na	na	49.4 U	47.4 U	47.5 U	na	na	na	na	na	na	na	na
Oil Range (C22-C40)	mg/kg	na	na	98.8 U	DET	95.0 U	na	na	na	na	na	na	na	na
TPH by NWTPH-Gx														
Gasoline Range (C6-C10)	mg/kg	na	na	NA	NA	NA	na	na	na	na	na	na	na	na
TPH by NWTPH-Dx														
Diesel Range (C10-C22)	mg/kg	na	na	NA	98.9 U	NA	54.8 U	112 U	257 U	262 U	427 U	25 U	95.9 U	37.3 U
Oil Range (C22-C40)	mg/kg		na	NA	271	NA	287	495	605	538	50 U	870	485	229
Total Metals by 6000/7000 Series														
Antimony	mg/kg	3	na	NA	NA	NA	1.83 U	1.73 U	1.83 U	190 U	0.957	1.67 U	1.51 U	1.51 U
Arsenic	mg/kg	6	7	**3.75**	**2.69**	**3.47**	**6.58**	**5.20**	**4.46**	**4.57**	**18.2**	**3.78**	**6.91**	**19.5**
Barium	mg/kg	na	na	116	83.0	94.9	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	na	na	NA	NA	NA	0.493	0.449	0.402	0.379	NA	0.500	NA	NA
Cadmium	mg/kg	0.6	1	0.969 U	1.03 U	1.01 U	0.402	0.380	0.439	0.493	0.478	**2.43**	0.408	0.288
Chromium	mg/kg	37	na	11.4	11.7	11.6	19.0	16.3	15.8	18.5	15.5	22.6	18.2	17.4
Copper	mg/kg	36	na	NA	NA	NA	21.3	19.4	17.9	20.0	31.4	**147**	28.3	16.2
Lead	mg/kg	35	17	13.0	**23.1**	13.2	**18.7**	**19.4**	**24.2**	**30.2**	**36.6**	**69.1**	**48.8**	14.7
Mercury	mg/kg	0.2	0.07	0.0775 U	0.0821 U	0.0810 U	**0.0747**	0.138 U	0.146 U	**0.0779**	0.116 U	**0.0766**	0.121 U	0.121 U
Nickel	mg/kg	18	na	NA	NA	NA	14.3	13.8	11.1	12.9	17.5	**44.3**	16.6	**21**
Selenium	mg/kg	na	2	1.94 U	2.05 U	2.02 U	7.31 U	6.91 U	7.31 U	7.58 U	1.45 U	1.73	1.51 U	1.51 U
Silver	mg/kg	4.5	na	0.969 U	1.03 U	1.01 U	0.292	0.259	0.201	0.379	0.290 U	0.633	0.151	0.303 U
Thallium	mg/kg	na	na	NA	NA	NA	0.365 U	0.346 U	0.365 U	0.379 U	0.290 U	0.333 U	0.302 U	0.303 U
Zinc	mg/kg	123	na	NA	NA	NA	**199**	**179**	**171**	**167**	**280**	**229**	**200**	**255**
PAHs by EPA 8270D SIM														
Acenaphthene	µg/kg	290	na	9.69 U	16.8	9.34 U	17.0 U	16.6 U	78.9 U	89.1 U	69.2 U	15.1 U	63.7 U	13.1 U
Acenaphthylene	µg/kg	160	na	9.69 U	9.51 U	9.34 U	17.0 U	16.6 U	78.9 U	89.1 U	69.2 U	22.9	63.7 U	13.1 U
Anthracene	µg/kg	57	na	9.69 U	26.0	9.34 U	17.0 U	11.2	78.9 U	89.1 U	69.2 U	18.5	63.7 U	13.1 U
Benz(a)anthracene	µg/kg	32	na	17.7	**114**	**40.4**	**45.0**	**54.8**	**115**	**249**	**68.6**	**48.2**	**40.0**	8.03
Benzo(a)pyrene	µg/kg	32	na	18.1	**125**	**41.4**	**56.6**	**62.5**	**109**	**293**	**52.2**	**104**	63.7 U	19.2
Benzo(b+k)fluoranthene *	µg/kg	27	na	**40.9**	**204**	**74.4**	**114**	**130**	**209**	**498**	**105**	**165**	127 U	**27.5**
Benzo(g,h,i)perylene	µg/kg	300	na	26.1	98.8	37.6	54.1	54.8	82.7	218	52.3	126	63.7 U	22.2
Chrysene	µg/kg	57	na	27.8	**163**	51.2	**71.8**	**86.5**	**132**	**269**	**75.5**	**100**	40.2	12.5
Dibenz(a,h)anthracene	µg/kg	33	na	9.69 U	22.8	9.34 U	17.0 U	10.4	78.9 U	**45.7**	69.2 U	12.5	63.7 U	13.1 U
Fluoranthene	µg/kg	111	37	**39.7**	**297**	**96.5**	**119**	**128**	**252**	**432**	**109**	**140**	**64.9**	10.2
Fluorene	µg/kg	77	na	9.69 U	16.2	9.34 U	17.0 U	16.6 U	78.9 U	89.1 U	69.2 U	15.1 U	63.7 U	13.1 U
Indeno(1,2,3-cd)pyrene	µg/kg	17	na	**21.9**	**102**	**36.8**	**50.6**	**51.8**	**83.3**	**230**	**44.8**	**106**	63.7 U	**17.5**
Naphthalene	µg/kg	176	na	9.69 U	9.51 U	9.34 U	17.0 U	16.6 U	78.9 U	89.1 U	69.2 U	11.2	63.7 U	13.1 U
Phenanthrene	µg/kg	42	na	13.9	**199**	37.2	**43.6**	**48.9**	**106**	**185**	69.2 U	**46.1**	31.9	13.1 U
Pyrene	µg/kg	53	1.9	**42.2**	**302**	**89.4**	**117**	**131**	**248**	**451**	**115**	**177**	**84.8**	**17.1**

TABLE 2.4b
Analytical Laboratory Results - Sediment Samples
Ecological Screening
Saxony-Pacific Properties

Soil Analyte	Units	Ecological Risk Screening Levels		Sediment Samples										
		Freshwater Sediment SLV	Freshwater Fish SLV	SS-1 (0 to 6 in. bgs)	SS-2 (6 to 12 in. bgs)	SS-3 (0 to 6 in. bgs)	SS-4 (0 to 12 in. bgs)	SS-4 (12 to 24 in. bgs)	SS-4 (12 to 24 in. bgs) Dup	SS-4 (24 to 36 in. bgs)	SS-5 (0 to 12 in. bgs)	SS-6 (0 to 12 in. bgs)	SS-7 (0 to 12 in. bgs)	SS-8 (0 to 12 in. bgs)
PCBs by EPA 8082A														
Arochlor 1016	µg/kg			NA	NA	NA	6.04 U	14.2 U	13.8 U	5.85 U	11.7 U	5.12 U	11.3 U	10.8 U
Arochlor 1221	µg/kg			NA	NA	NA	6.04 U	14.2 U	13.8 U	5.85 U	11.7 U	5.12 U	11.3 U	10.8 U
Arochlor 1232	µg/kg			NA	NA	NA	6.04 U	14.2 U	13.8 U	5.85 U	11.7 U	5.12 U	11.3 U	10.8 U
Arochlor 1242	µg/kg			NA	NA	NA	6.04 U	14.2 U	13.8 U	5.85 U	11.7 U	5.12 U	11.3 U	10.8 U
Arochlor 1248	µg/kg			NA	NA	NA	6.04 U	14.2 U	13.8 U	5.85 U	11.7 U	5.12 U	11.3 U	10.8 U
Arochlor 1254	µg/kg			NA	NA	NA	**4.98**	14.2 U	13.8 U	**6.37**	**5.96**	**3.89**	**12.6**	10.8 U
Arochlor 1260	µg/kg	34 (total)	22 (total)	NA	NA	NA	**5.12**	14.2 U	13.8 U	**5.9**	11.7 U	**13.6**	11.3 U	10.8 U
Organochlorine Pesticides by EPA 8081B														
Aldrin	µg/kg	40	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
alpha-BHC	µg/kg	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
beta-BHC	µg/kg	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
delta-BHC	µg/kg	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
gamma-BHC	µg/kg	0.9	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
cis-Chlordane	µg/kg			NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
trans-Chlordane	µg/kg	4.5 (total)	0.50 (total)	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
4,4'-DDD	µg/kg	4	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	4.53 U	1.88 U
4,4'-DDE	µg/kg	1.5	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
4,4'-DDT	µg/kg	7	0.39	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Dieldrin	µg/kg	3	2.2	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Endosulfan I	µg/kg	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Endosulfan II	µg/kg	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Endosulfan sulfate	µg/kg	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Endrin	µg/kg	3	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Endrin Aldehyde	µg/kg	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Endrin ketone	µg/kg	na	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Heptachlor	µg/kg	10	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Heptachlor epoxide	µg/kg	0.6	na	NA	NA	NA	2.81 U	2.51 U	2.65 U	2.81 U	1.95 U	2.27 U	1.97 U	1.88 U
Methoxychlor	µg/kg	na	na	NA	NA	NA	8.43 U	7.52 U	7.95 U	8.42 U	5.85 U	6.80 U	5.91 U	5.65 U
Chlordane (Technical)	µg/kg	4.5	0.50 (total)	NA	NA	NA	84.3 U	75.2 U	79.5 U	84.2 U	58.5 U	68.0 U	59.1 U	56.5 U
Toxaphene (Total)	µg/kg	na	na	NA	NA	NA	84.3 U	75.2 U	79.5 U	84.2 U	58.5 U	68.0 U	59.1 U	56.5 U

TABLE 2.4b
Analytical Laboratory Results - Sediment Samples
Ecological Screening
Saxony-Pacific Properties

Soil Analyte	Units	Ecological Risk Screening Levels		Sediment Samples										
		Freshwater Sediment SLV	Freshwater Fish SLV	SS-1 (0 to 6 in. bgs)	SS-2 (6 to 12 in. bgs)	SS-3 (0 to 6 in. bgs)	SS-4 (0 to 12 in. bgs)	SS-4 (12 to 24 in. bgs)	SS-4 (12 to 24 in. bgs) Dup	SS-4 (24 to 36 in. bgs)	SS-5 (0 to 12 in. bgs)	SS-6 (0 to 12 in. bgs)	SS-7 (0 to 12 in. bgs)	SS-8 (0 to 12 in. bgs)
Chlorinated Herbicides by EPA 8151A														
2,4-D	mg/kg	na	na	NA	NA	NA	0.60 U	0.53 U	0.53 U	0.57 U	0.47 U	0.52 U	0.4 U	0.4 U
2,4-DB	mg/kg		na	NA	NA	NA	0.60 U	0.53 U	0.53 U	0.57 U	0.47 U	0.52 U	0.4 U	0.4 U
2,4,5-T	mg/kg	na	na	NA	NA	NA	0.60 U	0.53 U	0.53 U	0.57 U	0.47 U	0.52 U	0.4 U	0.4 U
2,4,5-TP (Silvex)	mg/kg		na	NA	NA	NA	0.60 U	0.53 U	0.53 U	0.57 U	0.47 U	0.52 U	0.4 U	0.4 U
Dalapon	mg/kg	na	na	NA	NA	NA	0.60 U	0.53 U	0.53 U	0.57 U	0.47 U	0.52 U	0.4 U	0.4 U
Dicamba	mg/kg	na	na	NA	NA	NA	0.60 U	0.53 U	0.53 U	0.57 U	0.47 U	0.52 U	0.4 U	0.4 U
Dichloroprop	mg/kg	na	na	NA	NA	NA	0.60 U	0.53 U	0.53 U	0.57 U	0.47 U	0.52 U	0.4 U	0.4 U
Dinoseb	mg/kg	na	na	NA	NA	NA	0.90 U	0.80 U	0.80 U	0.86 U	0.70 U	0.78 U	0.60 U	0.60 U
MCPA	mg/kg	na	na	NA	NA	NA	90 U	80 U	80 U	86 U	70 U	78 U	60 U	60 U
MCPP	mg/kg	na	na	NA	NA	NA	90 U	80 U	80 U	86 U	70 U	78 U	60 U	60 U
Pentachlorophenol	mg/kg	na	0.31	NA	NA	NA	0.60 U	0.53 U	0.53 U	0.57 U	0.47 U	0.52 U	0.4 U	0.4 U
Picloram	mg/kg	na	na	NA	NA	NA	0.60 U	0.53 U	0.53 U	0.57 U	0.47 U	0.52 U	0.4 U	0.4 U

Notes:

* = RBC for Benzo(b)fluoranthene used
>Csat = This soil RBC exceeds the limit of three-phase partitioning.
>MAX = Constituent RBC for this pathway is greater than 100,000 mg/kg.
µg/kg = micrograms per kilogram
bgs = below ground surface
Bold = constituent concentration exceeds one or more screening criteria
DEQ = Oregon State Department of Environmental Quality
DET = Detected
ft. = feet
in. = inches
mg/kg = milligrams per kilogram
NA = not analyzed for this constituent
na = not applicable
SLV = Screening Level Value from DEQ. Guidance for Assessing Bioaccumulative Chemicals of Concern in Sediment. April 3, 2007.
NWTPH = Northwest Method Total Petroleum Hydrocarbons
PAHs = Polynuclear Aromatic Hydrocarbons
U = analyte not detected at method reporting limit concentration indicated

OMB Number: 4040-0004
Expiration Date: 8/31/2016

Application for Federal Assistance SF-424

* 1. Type of Submission:	* 2. Type of Application:	* If Revision, select appropriate letter(s):
☐ Preapplication	☒ New	
☒ Application	☐ Continuation	* Other (Specify):
☐ Changed/Corrected Application	☐ Revision	

* 3. Date Received:	4. Applicant Identifier:
12/18/2015	

5a. Federal Entity Identifier:	5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:	7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name:	City Center Development Agency of the City of Tigard
* b. Employer/Taxpayer Identification Number (EIN/TIN):	93-0503940
* c. Organizational DUNS:	0801056460000

d. Address:

* Street1:	13125 SW Hall Boulevard
Street2:	
* City:	Tigard
County/Parish:	
* State:	OR: Oregon
Province:	
* Country:	USA: UNITED STATES
* Zip / Postal Code:	97223-8167

e. Organizational Unit:

Department Name:	Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:		* First Name:	Sean
Middle Name:			
* Last Name:	Farrelly		
Suffix:			

Title:	Redevelopment Project Manager
Organizational Affiliation:	
* Telephone Number:	503-718-2420
Fax Number:	
* Email:	sean@tigard-or.gov

Application for Federal Assistance SF-424

*** 9. Type of Applicant 1: Select Applicant Type:**

X: Other (specify)

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

Urban Renewal Agency of a City

*** 10. Name of Federal Agency:**

Environmental Protection Agency

11. Catalog of Federal Domestic Assistance Number:

66.818

CFDA Title:

Brownfields Assessment and Cleanup Cooperative Agreements

*** 12. Funding Opportunity Number:**

EPA-OSWER-OBLR-15-06

* Title:

FY16 Guidelines for Brownfields Cleanup Grants

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

Add Attachment | Delete Attachment | View Attachment

*** 15. Descriptive Title of Applicant's Project:**

City Center Development Agency of the City of Tigard Cleanup of Main Street/Fanno Creek Property 1

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant: OR-1 * b. Program/Project: OR-1

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 09/01/2016 * b. End Date: 08/31/2019

18. Estimated Funding ($):

* a. Federal	200,000.00
* b. Applicant	53,500.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	253,500.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .

☒ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

☐ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

☐ Yes ☒ No

If "Yes", provide explanation and attach

Add Attachment | Delete Attachment | View Attachment

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: * First Name: Sean

Middle Name:

* Last Name: Farrely

Suffix:

* Title: Redevelopment Project Manager

* Telephone Number: 503-718-2420 Fax Number:

* Email: sean@tigard-or.gov

* Signature of Authorized Representative: Lloyd Purdy * Date Signed: 12/18/2015